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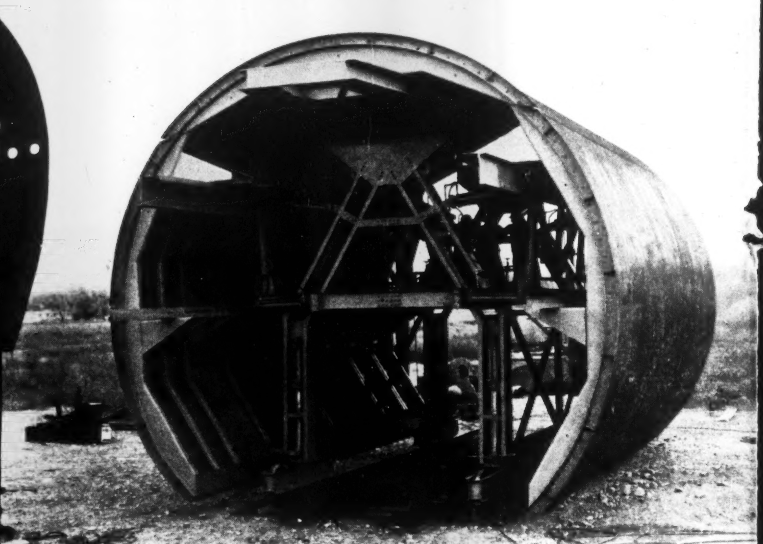

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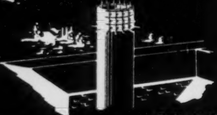

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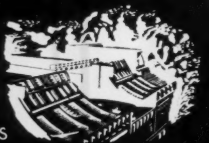

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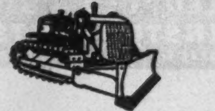

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Member ABP ABC

Volume 149 July 24, 1952 No. 4

WALDO G. BOWMAN
Editor

FEATURES IN THIS ISSUE

AFL cracks down on jurisdictional disputes 21
Precast plant built in earthquake region 34
Traveling forms line highway tunnel 36
What training for sanitary engineers? 40
Cities plan A-bomb defense 48
TVA expands steam plant ration 57

DEPARTMENTS

Reader Comment 10
Construction Trends 17
Construction Week 19
News of the Week 21
Labor 26
Meetings 31
Municipal 48
Men and Jobs 57
Obituaries 72
Business and Finance 88
Unit Prices 92
Construction Reports 94
New Products 113
Editorials 116

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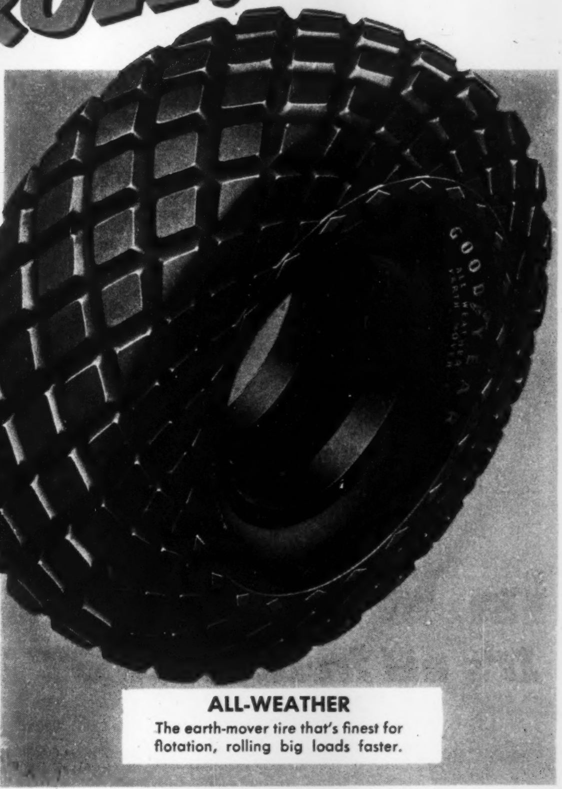

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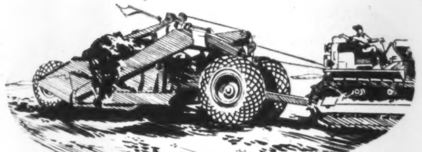

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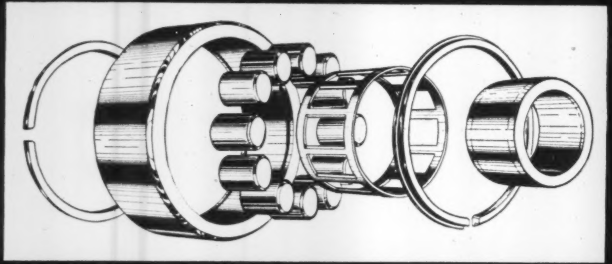

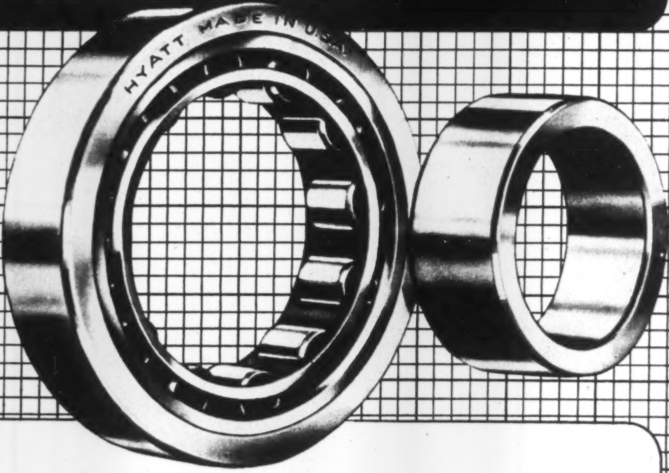

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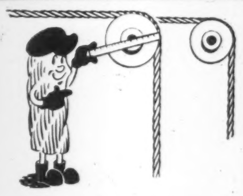
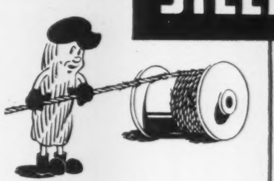


Avoid Small Drums and Sheaves

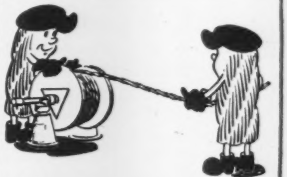


Keep Lines from Rubbing

Keep Drums and Sheaves Aligned

Check Your Sheave and Drum Grooves

Lubricate Your Lines Regularly



Use Jacks When Transferring Lines from Reel to Drum

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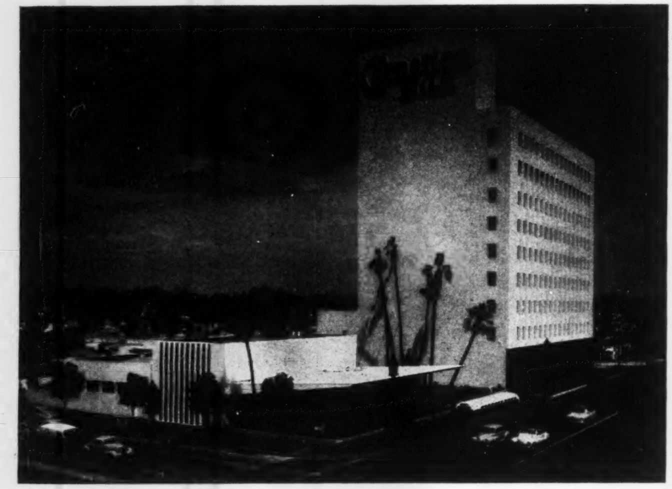

When Appearance Counts-Specify Plywood Forms

How SMOOTH can concrete be? As smooth as the material against which it's cast. That's why plywood-formed* concrete surfaces are smooth, dense, uniformly attractive. Large panel size automatically reduces fins and joints to an absolute minimum. Exact-size Douglas fir plywood concrete form panels are tough, rigid, dimensionally stable. Stark monolithic surfaces, curved surfaces, rustication lines, fluting and other special architectural design effects are also easily achieved with plywood forms. For free catalog, write Douglas Fir Plywood Association, Tacoma 2, Washington.

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- **Plywood provides sheathing and lining in one material**

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*Several plywood grades are manufactured for concrete form work. *Interior Plyform®* is made with highly moisture-resistant glues which permit multiple re-use (up to 10 to 15 are not unusual). For maximum re-use specify *Exterior-type PlyForm®*, bonded with completely waterproof adhesives. For special architectural concrete, use Exterior or Interior plywood grades with "A" face veneer—or one of the new plastic surfaced or hardboard-faced plywood panels.

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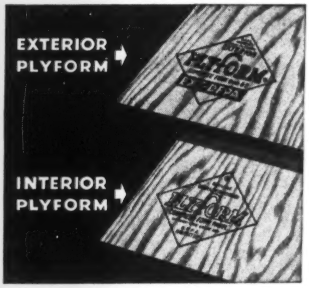
PANEL DISCUSSION

PlyForm Grade Plywood Now Made In Two Types



The familiar PlyForm grade-name now identifies special concrete form grades within both Interior and Exterior-type fir plywood. Exterior PlyForm replaces the old Exterior Concrete Form grade-name. Identified by the new diamond-bar symbol shown above, Exterior PlyForm with 100% waterproof bond is intended for use where forms will be used until the wood itself is worn away. Simultaneously, the highly moisture-resistant glueline of Interior PlyForm has been fortified for better service, and up to 10 or 15 re-uses may be expected even though glueline is not permanently waterproof.

Builder Saves $10 Per Square With Plywood Siding-Sheathing

With unlimited choice of building materials, Rusdick Lumber Sales chose plywood siding for its new Tacoma, Wash. warehouse and the builder reports the panels cut construction costs by $10 per square. "We chose plywood because we like a smooth, flush exterior surface but cost was an important factor and plywood was cheaper," says part-owner Russell Ross.

MacDonald Building Co. designed and built the new structure. According to L. B. MacDonald, plywood afforded the least expensive satisfactory construction. He estimates the in-place cost of plywood, unpainted, with studs 16″, o.c., and metal flashing, at $68 a square—some $10 less than the in-place cost of other siding combined with the necessary sheathing.

The building is 50′ by 150′, 20′ high to the roof trusses. PlyShield grade plywood, ⅝″-thick, was used as a combined siding-sheathing. Panels were applied horizontally with metal flashing.

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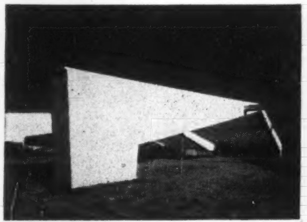
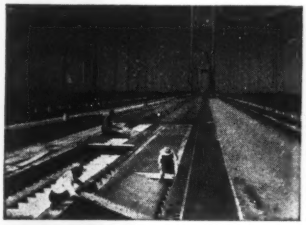
Plywood Shapes Unusual Concrete Roof Frames

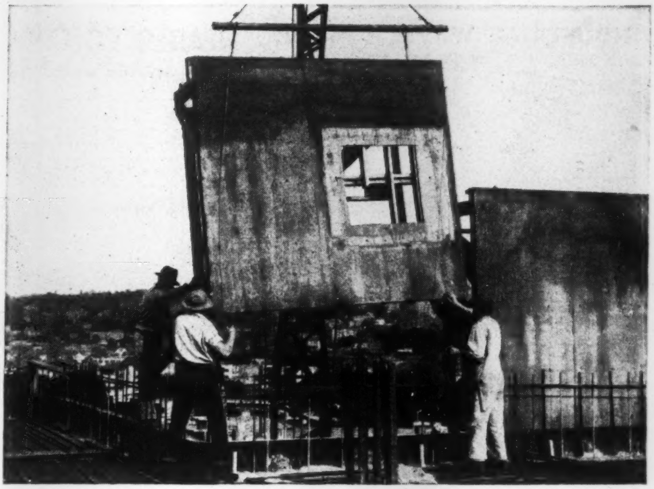
Plywood-formed concrete frames were used to replace conventional posts and roof trusses to achieve an unusual degree of interior flexibility in the Fred Meyers Burlingame Shopping Center Building, Portland, Oregon. Photo shows frames viewed from roof; vertical haunches project down through the roof to ground. Trussed wood joists are suspended from tie-beams secured to the frames. Because the frames are a definite architectural feature, concrete had to be smooth, fin-free. According to Leslie E. Poole, engineer in charge of construction, plywood offered the simplest, least expensive method for obtaining the smooth surfaces. In fact, because of its smooth, neat appearance, the concrete required no further finishing once forms were stripped. Exterior PlyForm panels were re-used up to eight times in forming the five frames. The building was designed by Engineer Leslie E. Poole; contractor: H. M. Hocken, Portland.





Mile-Long Road Slab Formed With Plywood

The time and cost-saving features of plywood forms often warrant their specification even when appearance and re-use are not important factors. An example is the recently completed Tacoma Narrows Bridge. On the job, almost a third of a million feet of plywood were used to form the mile-long reinforced concrete road slab. Earl Starbard, job superintendent for Woodworth and Co., contractors for all concrete work, reports that plywood was specified because the "forms had to be as tight as possible to prevent leakage on steelwork below the slab." In addition, he estimates plywood's size and light weight helped speed work and reduce labor costs by over 15%. In addition to use on the roadway itself, plywood was used to form all above ground concrete on the anchors, viaducts, bents and toll houses.



When Re-Use Counts- Specify Plywood Forms

MEASURED in terms of cost per use, Douglas fir plywood* ranks as one of the most economical of all form materials. On apartments, office or factory buildings, plywood form sections can be used to job completion—eliminating the expense of rebuilding forms once the job is under way. Plywood deserves ordinary care in handling, but it does *not* require extreme caution at every step and is far more rugged than other panel type materials. The exact number of re-uses obtained vary with grade and the care it receives on the job. Builders report up to 10 to 15 re-uses with *Interior-type PlyForm . . .* twice as many with *Exterior-type PlyForm* and new overlaid plywood panels. See grade data below.

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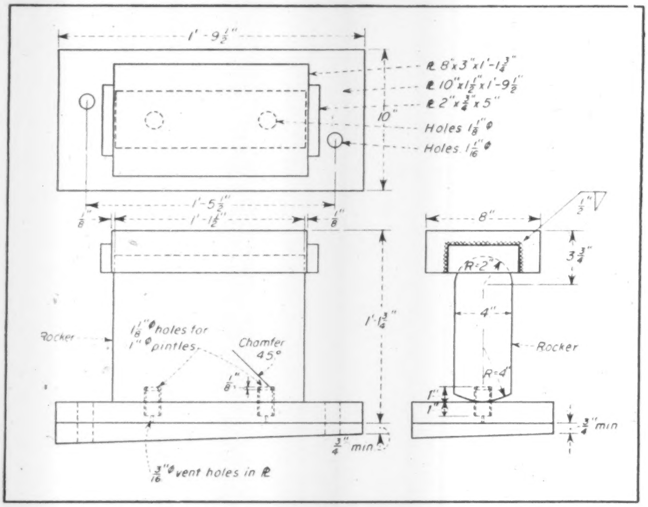


ROCKER SUPPORT for the beams in the Boston span that collapsed.

Controversial rocker

Sir: According to your article on the report of the board which investigated the Sullivan Square Overpass collapse (ENR June 19, p. 28) the blame is laid on the tipping of the rockers.

Since these are commonly designed with the center of the rocker surface at the center of the pin, the rocker is merely a segment of a wheel, and its reaction (neglecting friction) is normal to the bearing plate. Tipped rockers might result from either a discrepancy in span length or careless setting of a shoe where no provision for an alignment pin or tooth is made. In either case, no lateral load is applied to the column unless the shoe is tipped so far as to bear on the edge of the turned face.

It would certainly be of interest to publish additional details, particularly the makeup of the bent, the details of the shoes and the position of the rockers on the bent.

Truman P. Young
Hanly & Young, Engineers
Cincinnati, Ohio

Editor's Note—Numerous requests have been received for details of the rocker used to support the beams in the span of the Sullivan Square overpass, Boston, that collapsed. In response, the Massachusetts Department of Public Works submits the above sketch. It shows that the upper and lower surfaces have different centers of curvature. From this fact the conclusion may be drawn that when tipped away from the vertical, the rocker exerts a horizontal thrust against its support.

Defense community works

Sir: In the article "How 45,000 H-bomb workers live and travel," (ENR June 19, p. 36) the statement is made that "there is money for new water supplies and sewers, but not enough for water and sewage treatment."

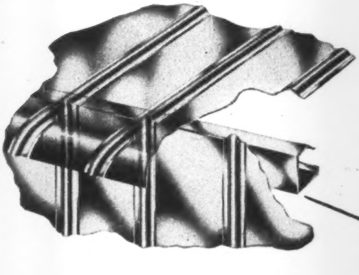
Mention is also made in the article of the responsibilities of HHFA in respect to community facilities.

The inference that there is no money for water and sewage treatment is incorrect. It is true that there may not be "enough" for all water purification and sewage treatment needs. However, it is also true that there may not be "enough" for all water supply and distribution and sewer needs.

Actually, 11 projects have been approved to date involving either water or sewage treatment with intercepting sewers. These are mostly projects in small communities, and total federal assistance is $2,200,000. Preference is given to water purification over sewage treatment.

M. LeBosquet, Jr.
Sanitary Engineer Director
Chief, Community Facilities Branch
Public Health Service
Federal Security Agency

Weathersealed Eaves for *Greater* Weathertightness



WEATHERSEALED EAVES, a feature of Butler Buildings, pay off in easier erection — *plus* neater appearance, greater weathertightness. Curved eaves are die formed on *full length* roof sheets and are integral part of the roof covering. Sidewall sheets are mitered at the top to nest into the roof sheet corrugations and form a neat, weathertight eave. Erection is quicker, and rust-vulnerable flashing is eliminated.

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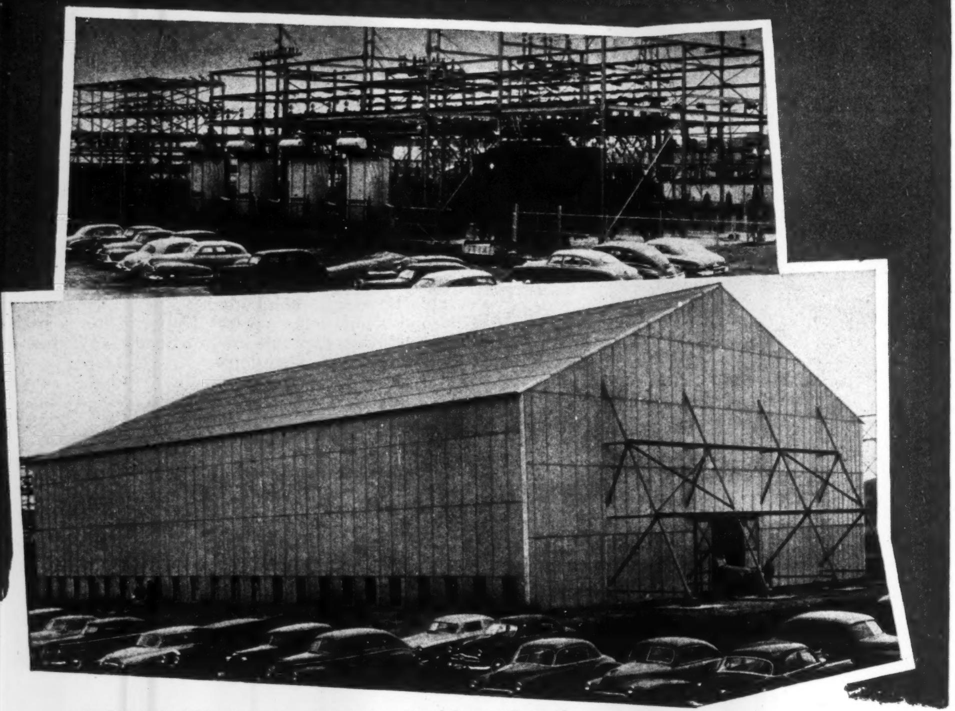

"BEFORE AND AFTER" pictures show how the Iowa-Illinois Gas and Electric Company's sub-station at Bettendorf, Iowa, was protected by an "umbrella type" cover of "Century" Asbestos-Cement Corrugated. **Erection Contractor:** Illinois Roofing and Insulation Company, Chicago, Illinois.

For a special problem —such as an "umbrella" for a sub-station— or for 1,000-and-1 typical industrial applications,

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"Century" Asbestos-Cement Corrugated solved an unusual problem at Bettendorf, Iowa. The 69,000-volt sub-station there of Iowa-Illinois Gas and Electric Company had an hour's service breakdown in early 1950. It was found that a sulphurous acid mixture of smoke and fog, swept in from a nearby generating station by the wind when in a certain quarter, had collected on the insulators and caused flash-overs or shorts. It was decided that the entire sub-station should be put under cover (which rarely, if ever, is done) as protection against this condition, and a steel framework covered with "Century" Roofing and Siding was erected. This "umbrella" has kept the insulators clear, and service uninterrupted.

In this, as in countless less unusual cases, experience has shown that "Century" Asbestos-Cement Corrugated is an ideal covering. It is composed of asbestos fiber and portland cement, subjected to pressure to form a dense product, strong and durable. "Century" Asbestos-Cement Corrugated *can't burn*, is highly resistant to weather, rot, rust, and corrosive fumes, is proof against rats, termites, and other destructive insects.

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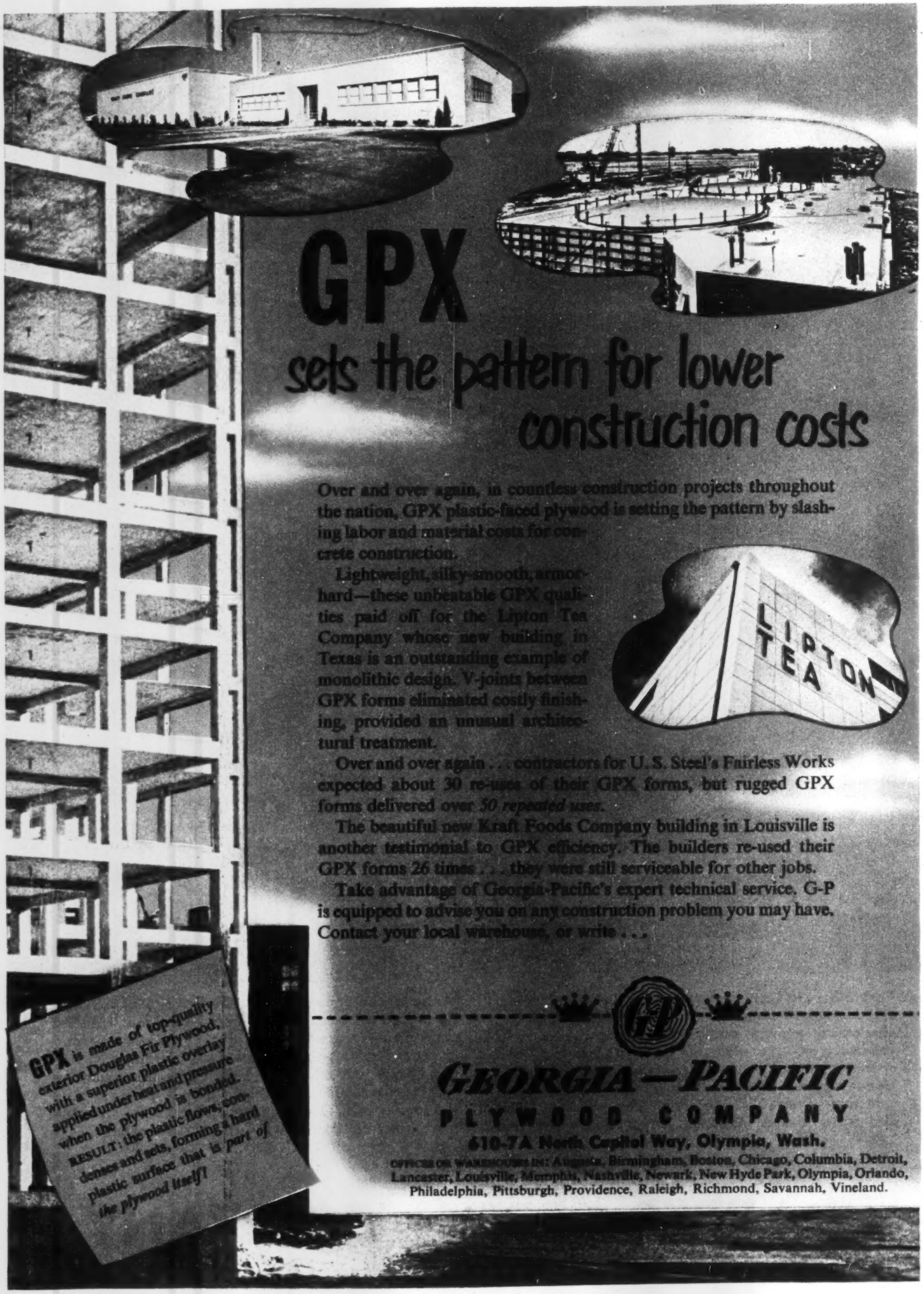

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Over and over again, in countless construction projects throughout the nation, GPX plastic-faced plywood is setting the pattern by slashing labor and material costs for concrete construction.

Lightweight, silky-smooth, armor-hard—these unbeatable GPX qualities paid off for the Lipton Tea Company whose new building in Texas is an outstanding example of monolithic design. V-joints between GPX forms eliminated costly finishing, provided an unusual architectural treatment.

Over and over again . . . contractors for U. S. Steel's Fairless Works expected about 30 re-uses of their GPX forms, but rugged GPX forms delivered over *50 repeated uses.*

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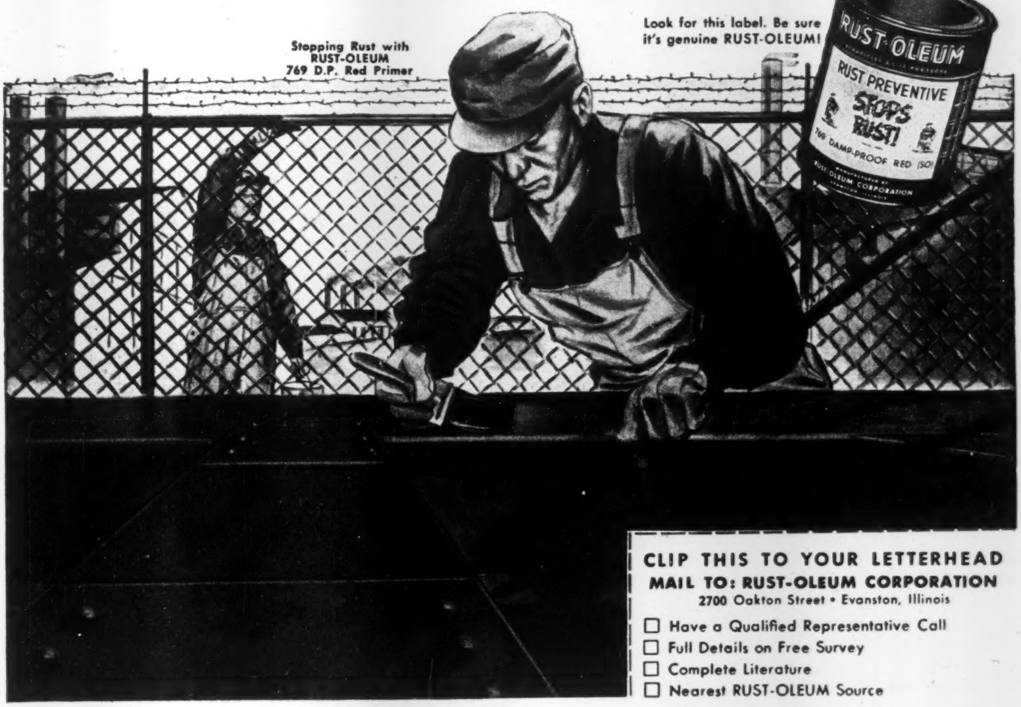

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"CATERPILLAR"

The Billion-dollar Giant at Savannah River

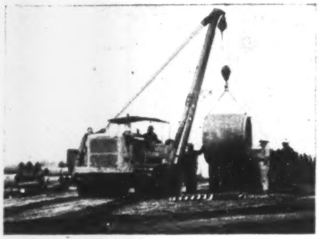
In Aiken and Barnwell Counties, South Carolina, a construction job is in progress that is not only changing the face of the earth but may well change the course of history.

By the fall of this year an estimated 45,000 construction workers will be employed on this project—the mighty Savannah River Plant being built for the U. S. Atomic Energy Commission. Its purpose is to produce the fuels required for both A-bombs and H-bombs. The prime contractor is E. I. du Pont de Nemours & Co., Inc., and a number of the country's foremost construction companies are sub-contractors.

Total cost of the plant is expected to be at least $1,200,000,000. Twenty million cubic yards of earth will be moved, and 1,250,000 cubic yards of concrete will be poured before it is finished. The plant area covers 315 square miles of sparsely settled land. It will be linked together by 105 miles of modern roads, 60 miles of railroad grade and 85 miles of underground water pipe.

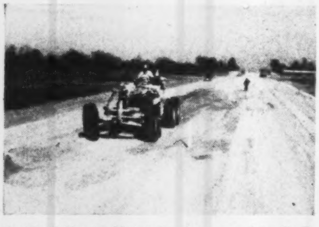
Up-to-date earthmoving methods and equipment are making rapid headway on this enormous undertaking. For example, one sub-contractor, R. B. Potashnick, of Cape Girardeau, Missouri, has moved over 800,000 yards of earth in less than three months. Accounting for a major part of his production are four "Caterpillar" DW21 Tractors with No. 21 Scrapers. These fast two-wheel rigs have been averaging 1,500 cubic yards apiece in a 9-hour day. Each unit is push-loaded by a "Caterpillar" D8 Tractor, and it carries up to 20 yards of pay load over a 2,500-foot haul.

Potashnick equipment has also completed grade for 19 miles of 4-lane highway on the project in less than 90 days. Such speed is typical of all construction work in the area.



This "Caterpillar" Diesel D8 Tractor, equipped with Trackson Pipe Layer, is working on sewer construction at the plant project.

Very few people except those directly involved are allowed inside the project area. But there is one common factor throughout the immense operation. Wherever people go there are big yellow machines at work. "Caterpillar" Diesel Tractors, both wheel and track-type, "Cat" Scrapers and Wagons, Motor Graders, Engines and Electric Sets—all are contributing their dependable production capacity to the biggest and perhaps the most important job in the history of the world.



A "Cat" No. 12 Motor Grader, owned by R. B. Potashnick, levels grade for a railroad bed in the Savannah River project area.

Before water pipe is laid, a "Caterpillar" Diesel D4 Tractor with HT4 Traxcavator finishes grading the ditch. Owner, U. S. Atomic Energy Commission.

One of R. B. Potashnick's "Cat" DW21 Tractor-Scraper units at work on the Savannah River Plant project. Push-loaded by a D8, it can make the cycle on a 2,500-foot haul in 2½ minutes, lugging 20 pay yards.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

NON-FERROUS METALS GO ON EASING

The pinch in non-ferrous metals is over—and it won't return, barring a war or a war scare bad enough to make industry start buying up big stocks of metal. Trends in prices show that there's no longer any reason to fear serious shortages of lead, zinc or copper.

Prices of lead and zinc are way below ceiling. The price of U. S. copper still threatens to rise—but only because it's been kept artificially low by controls. The price trend in foreign copper gives a truer picture of the basic trend; the cost of foreign copper on the "free" market has dropped 20 cents or more a pound in the past year. Of the four key non-ferrous metals, only aluminum is likely to go up much in the next year or so.

- **Lead and zinc**—What happened to lead is a good indicator of the general picture in non-ferrous metals. Lead is down to 16 cents a pound now, 3 cents below ceiling. A few months ago, it cost 19 cents; and foreign metal sold for as much as 25 cents in the past year.

The price came down partly because production increased. But a key reason for the drop is that a lot of last year's heavy demand was inflated—people were buying because they thought lead would get scarce. When no real shortage developed, this kind of buying dissappeared. And dollar shortages abroad helped cut foreign buying, made more metal available for the U. S.

The same sort of developments helped lower the zinc price, although zinc stayed at the 19.5-cent ceiling until the steel strike cut demand for galvanizing in early June. But when zinc fell, it really dropped fast. Now it cost 15 cents a pound.

Both lead and zinc will stay below ceiling—that's the belief in the metal markets. Stocks are big, and production is still increasing. Lead and zinc will probably cost 14-16 cents a pound through 1952, and they may be shaky even at those prices by the beginning of next year. The U. S. government is already buying lead for a special stockpile, just to keep the price up. It may have to do the same thing for zinc before long.

- **Copper is another story**—The copper price is due to rise. Demand is heavy, and there is constant pressure on Washington to raise the 24.5 cents a pound price on metal mined in the U. S. Washington may have to allow some price increase later this year to cover higher wage costs in mines and smelters.

But prices of U. S. copper products—as distinct from the pure metal—won't rise much. That's because they are based on the assumption that copper and brass products are made of 60% U. S.-mined copper and 40% imported copper. Imported metal is not going up in price. In fact, it's likely to go down.

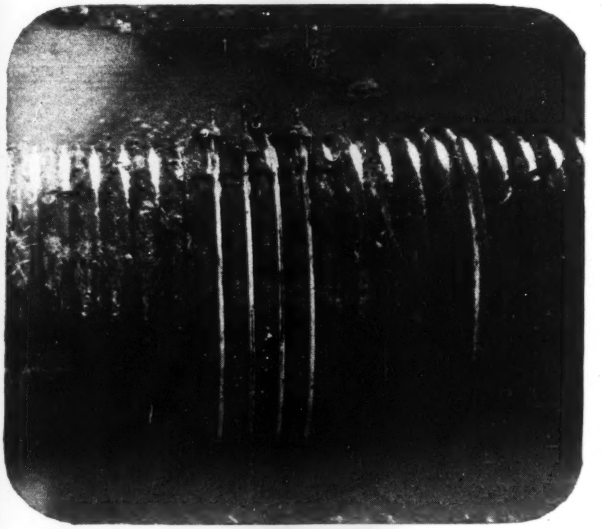
We are getting copper from Chile under the U. S.-Chile agreement at 36.5 cents a pound. That's more than it is worth; other foreign copper is selling in the neighborhood of 33-34 cents. The betting now is that Chile won't be able to sell enough metal at 36.5 cents, will have to let the price drop in order to get rid of its stocks. It might happen this fall—unless the U. S. government decides to support this price for a while, too.

So—taking both domestic and foreign prices into account—copper and brass products may cost less by early next year. And there will be plenty of copper available—U. S. production is not rising much, but output abroad is increasing.

The outlook for aluminum prices is not so clear. Aluminum Company of America last week applied to the Office of Price Stabilization for the right to increase prices by at least 10%. Production is running more than 10% above a year ago, but demand is still heavy. Production costs are due to rise once the new wage pattern set by the steel settlement hits the aluminum industry. Higher wages may push aluminum up 2 cents a pound within the next few months.

Underground activity won't sabotage THIS sewer

PIPE THAT TREADS WATER. Here is a close-up of the Armco watertight joint. Note the four bolted rods that say "no" to seepage.



History won't repeat itself here. Infiltration and the resultant undermining caused settlement and ultimate failure of a rigid, short section sewer used in this airport. But with the installation of Armco ASBESTOS-BONDED Pipe, these costly dangers have been eliminated.

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Write for more information on these pre-engineered corrugated metal structures. Armco Drainage & Metal Products, Inc., 3822 Curtis Street, Middletown, Ohio. Subsidiary of Armco Steel Corporation. Export: The Armco International Corporation.

ARMCO SEWER STRUCTURES ARMCO

PRESSURE MOUNTING—Developments in the steel strike came thick and fast early this week, indicating pressures for settlement were relentlessly tightening on the striking CIO steelworkers and on the steel industry. Meanwhile the shortage of steel was as relentlessly tightening on construction, to the tune of an estimated $1 billion in loss of volume.

Here were some developments: A new federal move to seize part of the strikebound steel plants under the draft law was drawn up and submitted to the White House. The steelworkers' powerful Wage Policy Committee met with President Phil Murray in Pittsburgh. The rift between top mobilization officials over the amount of increase in steel prices to be granted after strike settlement continued to deepen. Meanwhile lost tonnage climbed up over 15 million tons as the strike entered its eighth week. It is the worst steel strike in the history of the country.

Construction men watched pipelines of steel supply reduce to a trickle. Some have turned to foreign sources, at prices about 50% above U. S. steel price levels, to keep their projects moving. Others are staving off shutdowns by drastic rescheduling of jobs. Some are just plain shutting down.

Last week, ENR's indicator of contract awards showed new awards had started to slip. This week, contract awards were down again (See page 88). Contract awards were at $382 million two weeks ago. This week they are down to $278 million, and industrial volume was only $15 million. The trend can be expected to continue down, as the steel shortage will aggravate a seasonal trend the rest of this month and next.

THIRD STRIKE FOR REG X SOON?—The more builders study the new Defense Act, the more confused they get about what's due on Regulation X (which fixes down payments, among other things).

But as of now, you can bet on this: This regulation will be thrown out before the official Oct. 1 date. Probability is that it will go out in September, and some observers think it might head for the showers as early as some time in August.

The reason: The act says that if housing falls below the 1.2-million start rate for any three-month period, controls are to be eased. Housing up to June tallied a total of 567,500 units—under that rate, and so the official time for removal would be Oct. 1. But HHFA and FRB officials said freely enough last week that if drastic easing of controls is necessary, they'll drop controls earlier.

And there have been plenty of signs of easing, outside of the rate of starts, including realtors' survey showing the sales of all housing down—older housing in particular.

TIGHT REIN FOR PUBLIC HOUSING—Having spent their between-convention time in studying the Independent Offices bill; public housing advocates found reason for gloom:

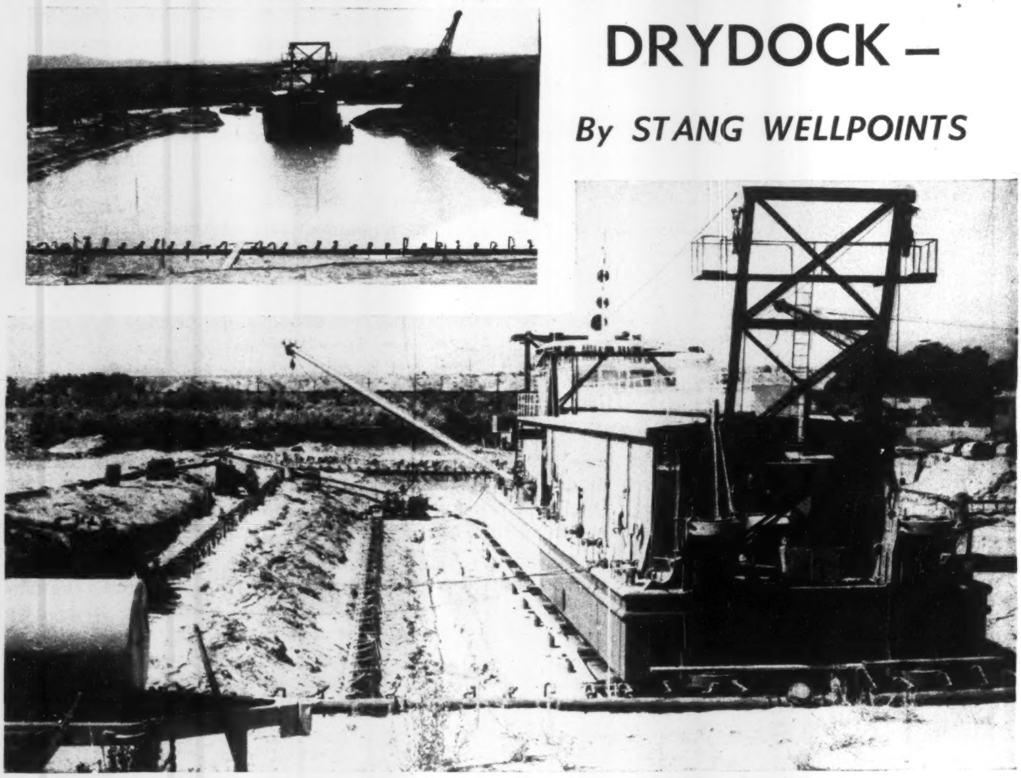
A rider on the bill puts a flat limit of 35,000 units on work in fiscal '53—but, more discouraging, the rider put the same limit on all future years, unless Congress specifically ups the figure. That would seem to spell the end of the ambitious plan for a six-year, 810,000-unit program that the Administration has been pushing for so long.

Trouble has stemmed from the fact that although Congress ordered the program in 1949, only 145,000 units have been started since. This year, the House was adamant about cutting the program back to 5,000 units, and only agreed to the 35,000 figure when it was made permanent.

One effect of the provision will probably be a postponement in further offerings of housing bonds, until various agencies unscramble the problem of what should be pushed ahead.

BOAT BASIN TRANSFORMED INTO DRYDOCK –

By STANG WELLPOINTS



Small photo: **Dredge floating into position (indicated by markers in water) over foundation for drydocking.** ***Large photo:*** **Basin dewatered, dredge settled on foundation, repairs proceeding "in the dry".**

To provide temporary drydocking facilities for the dredge boat "Colorado" at Needles, California, the U. S. Bureau of Reclamation Engineers used the dredge itself to dig the basin, and Stang Wellpoints to dewater it and keep it dry. The method was to excavate the basin, back dredge out, build dike, install Stang Wellpoints and dewater. Then the dredge foundation was built, dike breached, basin flooded, dredge floated into position. The dike was then plugged, and the basin again Stang-dried. This unusual installation is another proven example of how Stang engineers and equipment solve tough construction problems and lower costs.

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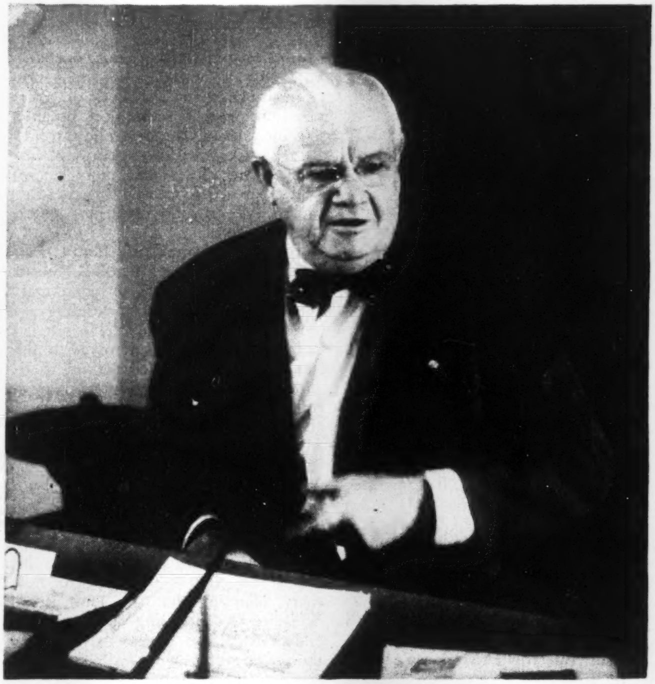


RICHARD GRAY, Building Trades Department President, takes a firm stand.

AFL bans use of pickets in jurisdictional disputes

By Joe Gambatese
Washington Staff

A big step toward curbing jurisdictional picketing on construction projects has been taken by the AFL Building and Construction Trades Department.

The general presidents of the 19 building trades international unions at a meeting in Washington on July 15 unanimously agreed on a plan for cracking down on local unions or building trades councils which engage in or give assistance to jurisdictional picketing.

The plan—incorporated in a "Declaration of policy"—was welcomed as a "step in the right direction" by industry spokesmen. It is expected to strengthen the National Joint Board for Settling Jurisdictional Disputes, which construction employers and the AFL building trades established in May, 1948.

The plan is the answer of Richard J. Gray, president of the AFL building trades, and the 19 union presidents to recent criticism of increasing jurisdictional stoppages on construction work. One of the critics was the department's own secretary-treasurer, Joseph D. Keenan, who is also director of the labor office of the Defense Production Administration (ENR May 8, p. 29).

Jurisdictional strikes have risen steadily since the Joint Board was created (See table below). Gray thinks the situation, while not good, hasn't been as bad as the statistics seem to indicate. He attributes much of the rise to increased construction activity and feels there would have been more jurisdictional strikes without the Joint Board.

On the other hand, the Bureau of Labor Statistics' figures on jurisdictional strikes in construction have been criticized by John T. Dunlop, impartial chairman of the Joint Board, as underestimating the number of jurisdictional stoppages in construction. This was in May, 1950, in an article in the Harvard Review of Economics and Statistics. Dunlop's point was that BLS doesn't hear about many strikes in construction and that it doesn't count those which last less than a full working shift, as is the case in many jurisdictional strikes frequently occurring.

BLS Commissioner Ewan Clague later defended the BLS figures and asserted that they might be more accurate if the Joint Board would make its strike reports available to BLS. Gray has since called Dunlop to task for his attack on BLS.

- **Plan's main points**—The plan was being sent to each of the 12,500 local building trades unions, the 18 state building trades councils and the 576 local building trades councils. It has three main points:

1. No local union is to post a picket line for jurisdictional purposes. Any local that does faces "immediate disciplinary action" by the International President. (Gray told ENR it is understood that the discipline would be revocation of the union charter.)

How jurisdictional strikes have increased

	Number	Workers involved	Man-Days idleness
1951	198	63,400	317,000
1950	124	25,400	166,000
1949	99	21,600	137,000
1948	31	4,090	32,900
1947	68	11,200	232,000

Source: Bureau of Labor Statistics.

The AFL resolution

Declaration of policy relative to picketing by building and construction trades unions for jurisdictional purposes:

Whereas it is recognized that the establishment of picket lines for purposes of objecting to the awarding of work in the building and construction trades results in jurisdictional strikes, and

Whereas, such picketing and resultant strikes are in violation of the constitution of the Building and Construction Trades Department, and

Whereas, it is herewith the unanimous desire of the general presidents, the executive council of the department and the officers of the department to put a stop to all such illegal picketing, we do on this 15th day of July, 1952, herewith declare our policy to be as follows:

1. That no local union of an unaffiliated international whose international union president's signature appears below shall institute or post picket lines for jurisdictional purposes. To do so will result in immediate disciplinary action by the international president of such local union.

2. That no local building and construction trades council shall authorize or lend support to any picketing for jurisdictional purposes. To do so will result in immediate steps by the building trades department officers to revoke the charter of such local building and construction trades council.

3. That in the event pickets are posted by any individual union for jurisdictional purposes it is our declared policy that all other unions are to ignore such picket lines pending appropriate disciplinary action by the international president of the local union posting such picket line.

4. Each international president is to forward a copy of this declaration of policy to all his affiliated local union and district councils.

The department officers shall forword a copy of this declaration of policy to each local and state building and construction trades council.

(Signed by general presidents of all 19 building trades unions. They are:

Asbestos workers, boilermakers, bricklayers, ironworkers, carpenters, electricians, elevator constructors, operating engineers, granite cutters, hod carriers, lathers, marble polishers, painters, plasterers, plumbers, roofers, sheetmetal workers, stone cutters and teamsters.)

2. No local building trades council is to authorize or support any such picketing. "Immediate steps" will be taken to revoke the charter of any council which does.

3. Where picket lines are posted for jurisdictional purposes, other unions are supposed to ignore them.

• Not covered by plan—Gray said this does not apply, of course, where a contractor ignores a decision of the Joint Board deciding a jurisdictional dispute, such as the Empire State Painting and Waterproofing Co. (See page 27).

Nor does the plan apply to disputes involving the International Association of Machinists. Although in the AFL, the IAM is not in the Building Trades Dept. It is not covered by the Joint Board and the building trades have no control over this union.

The IAM has had long-standing jurisdictional disputes with the carpenters over millwrights and the operating engineers over the operation of some construction equipment. The last quarterly meeting of the AFL Executive Council in Boston last April instructed President William Green to notify the IAM that it must quit taking its jurisdictional disputes with other AFL unions to the National Labor Relations Board for solution under the Taft-Hartley law.

Intra-AFL disputes are supposed to be ironed out by the AFL Executive Council. But the IAM doesn't want to submit to that procedure because it feels the council is stacked against it. Instead, the IAM would like to have its jurisdictional disputes with other AFL unions settled by an outside arbitrator. This is still up in the air.

• Disputes bad for construction—Gray said the international presidents were brought together so that they could see how badly construction was being hurt by jurisdictional squabbling.

"We were able to show them the whole picture," he said. "By individual unions, it didn't look too bad. But we were able to show them how bad the overall picture was when you put them all together."

When it was suggested that the plan might prove meaningless unless enforced, Gray emphasized that the union presidents "meant business" and that charters of recalcitrant locals or councils would really be revoked.

Dunlop hailed the plan as worthwhile. Besides reflecting a serious attitude on the part of the union presidents to "do something" about jurisdictional picketing, Dunlop pointed out that it gives him "another tool" as jurisdictional disputes arbiter to stop jurisdictional strikes and make the Joint Board setup more effective.

If Dunlop can swing the anti-picketing weapon to stop picketing on a project, it will at least keep the other trades on the job.

• Jurisdictional "strikes" not covered—Note that the new policy does not cover jurisdictional "strikes" or plain refusal to work on a project because of a jurisdictional issue. The Atomic Energy Commission's construction program has been hurt more by refusal to work than picketing, according to AEC's labor relations chief, Oscar Smith.

Jurisdictional picketing hasn't been much of a problem to AEC, Smith said. Refusal to work by one craft can create a bottleneck holding up other work on a project. He cited a strike by bus drivers, members of the teamsters' union, which cut off transportation for construction workers at Hanford. The teamsters thus were able to completely shut down the job which no other union could do.

H. R. Cole of the Tile Contractors Association, a member of the Joint Board, praised the new policy and predicted it would bring the AFL International Brotherhood of Electrical Workers back into the Joint Board. The IBEW pulled out in February, claiming that the Joint Board decisions were favoring unions in general construction to the detriment of unions dealing with specialty contractors (ENR, Feb. 21).

The Associated General Contractors has sent copies of the Declaration of policy to its members without comment. A spokesman said the association naturally was pleased with building trades' action.

Other AFL action

Other action taken at the meeting of presidents of the nineteen AFL building trades unions:

1. Asked President Truman to keep wage controls on contractors employing eight or less workers. Under the Defense Production Act amendments, employers of eight or less will be exempted from wage controls, beginning July 29, unless an exception is made by the President for a particular industry, job or area. The Construction Industry Stabilization Commission has taken the same position. This was done during World War II.

2. Recommended to the AFL executive Council that it not pull its members off WSB and that it keep CISC intact. The Council is to take up the question of boycotting WSB at a meeting July 28.

Overcommitment feud boils

By Sam Justice

Washington Staff

A showdown is brewing between Congress and some of the executive agencies over control of federal spending. Primarily involved are the Bureau of Reclamation and the Corps of Engineers.

Opinions from the Comptroller-General and the Attorney-General are in preparation and are due shortly to clarify whether or not the Bureau of Reclamation violated the law in overcommitting an authorization for a project.

Rep. Clair Engle of Calif., chairman of the House Interior Subcommittee for Irrigation and Reclamation, requested the opinions after it developed that Reclamation had overcommitted by about $3 million its authorization for the Eklutna hydroelectric project at Anchorage, Alaska. The committee had limited authorization to $20,365,400 and when Reclamation sought to have this authorization increased to $35 million, it was learned that contract commitments amounting to $23,622,698 already had been made.

It is all part of the fight on Capitol Hill to recapture control of spending from the agencies. The House almost succeeded in putting a ceiling on military expenditures this year and it did put a limitation on money to be spent for atomic energy expansion. Limitations were put on several other appropriations.

• **Control sought**—During 82nd Congress both Interior and Public Works Committees of the House began putting dollar limitations on projects in place of the open-ended authorizations permitted by the agencies which authorize whatever money was needed to complete a project, provided the money could be gotten from the appropriations committees.

Congressmen complain that once an agency gets an authorization, Congress pretty much loses control over spending. Costs may be doubled or trebled over the original estimate before project is completed they point out with Congress nearly helpless to do anything about it. In the past when Congress balked on increasing appropriations for unfinished projects, the agency has always pointed out that it's better to ante up more money to finish it than to leave the project uncompleted and abandoned. So, Congress generally gave in.

This year the House Interior Committee has its back up and apparently is set for a showdown.

Reclamation's Commissioner Michael Strauss is "on the spot."

It refused to increase the authorization and instead sought the legal rulings. Engle's committee complains that Reclamation Commissioner Mike Strauss and his office treat the committee cavalierly. So it plans to sit tight until the bureau uses up all of the $20 million both authorized and appropriated and then see what happens. Before then the committee hopes to have a favorable ruling.

• **Penalties tough**—The ruling is sought under the Anti-Deficiency Act of 1951 which has both civil and criminal penalties for the over-committing of authorizations.

Strauss' office says its defense is that contracts it made in excess of authorization were contingent on Congress authorizing the money. Reclamation now estimates total cost of Eklutna at $33.8 million and plans to complete it in 1955. It attributes part of increased cost to increase in cost of materials and to high cost of labor in Alaska. Rest of increase is for an additional 42-million kw hour output, which will bring in additional revenue of $400,000 a year.

The Interior Committee pointed out that what it is trying to stop is a general practice by Reclamation of asking for unrealistic authorizations and then coming back again and again for additional money. It just chose the Eklutna project for a showdown.

Interior isn't the only congressional committee having problems with agencies over spending authorizations. House Public Works Committee is having same trouble with Army Corps of Engineers. During the 82nd Congress, Public Works began putting limitations on group projects. It claims that the Engineers now have overcommitted authorizations on some of these projects in excess of $850 million.

For instance, on the Missouri River basin flood-control projects a total of $616 million has been authorized, while the estimate for construction work already begun is $1,022 million. The Los Angeles basin project is $150 million overcommitted, central and south Florida, $32 million over; Sacramento, $11.5 million over; Columbia River, $2.8 million over, and under rivers and harbors the Arkansas River project is an estimated $49 million over.

Charles D. Curran, staff director for House Public Works Committee, has sought rulings from Speaker of the House whether these overcommitments were violations of the House rules.

Before the 83rd Congress convenes in January the issue is likely to be settled, but whichever way it goes it likely won't end the fight between Congress and the agencies for control of spending.

Maxon, McGraw get major AEC contracts

The Atomic Energy Commission, which could commit up to $3 billion for construction in fiscal '53, last week announced two major awards.

A $464-million addition at Oak Ridge will be built by Maxon Construction Co., of Dayton, Ohio; and at Paducah, the contract on a $459-million addition to the uranium-235 separation plant, now under construction, was awarded to F. H. McGraw, of Hartford, Conn. McGraw is also the contractor for production facilities now under construction at Paducah, Ky.

M. W. Boyer, general manager of the AEC, said that a substantial part of the work at both sites will be done under fixed-price subcontracts.

He said the following architect-engineer firms already are at work planning and designing the new facilities: Giffels & Vallet, Detroit, design and supervision of plant construction; Sargent & Mundy, Inc., Chicago, design of high voltage power distribution systems and substations; Carbide & Carbon Chemicals Co., plant operation.

"Tight construction schedules and the urgency for increasing production facilities were important factors in selecting Maxon and McGraw, both of whom have had experience in building gaseous diffusion plants," Boyer said.

Road-building contest is cost race

Down in North Carolina's Sixth Highway Division, competition is underway under the supervision of the Federal Bureau of Public Roads to determine who can build roads cheaper and better—forces of the North Carolina Highway Department or private concerns. And the results of the test may have far-reaching implications.

Until the advent of the administration of Governor W. Kerr Scott, private contractors did approximately 80% of the state's road construction work, with state forces handling the other 20%. But during the current administration, the major share of the road work has been done by state forces (ENR Jan. 31, p. 29).

This situation has drawn the fire of the contractors, who dispute the state's claim that it can do the work better and cheaper. The contractors contend that the state forces do not always meet job specifications and that it costs the state just as much but merely looks cheaper because state figures do not include such items as taxes, insurance, licenses and the like, which contractors, of course, have to pay.

The Sixth Highway Division, with headquarters at Asheboro, has seen most of its work done by state forces; and the controversy came to a showdown when Commissioner George Coble of Lexington asked the Bureau of Public Roads if the state's forces could do the work on 15 federal-aid highway projects within the division.

It has been in the sixth division that state forces have done the lion's share of highway work. Under the state's $200-million rural-road bond program, state forces have done 73.3% of the work, and private contractors have been permitted to do only 26.3%. No grading project under the bond program in the division has been advertised or let to contract to private contractors.

In the state as a whole, through December 31, 1951, a total of $126.6 million of the bond program for secondary roads has been spent, with the state doing 57.1% of the work and private contractors doing 42.9%.

Contractors have been vigorously protesting the change in the tide which formerly saw them doing the bulk of the work, and when Ross asked the Bureau of Public Roads if state forces could handle the federal assistance program, they raised another howl.

• Tests started—The Bureau of Public Roads, which spends around $500 million a year on federal-assistance roads, thought this would be a good chance to test the question of state forces vs private contractors—to see who could do the job quicker and cheaper.

It decided to place 15 road-building projects in the competition, with eight jobs being let to contractors on the basis of low bids, and seven to state forces based on estimates. All the projects will have the same specifications, ranging from 5 to 12 miles, and including grading, drainage, base and bituminous surfacing. Contractors, it was decided, were to bid on all 15 projects in order that their costs could be compared with those of the state forces.

To date, 7 of the 15 projects included in the test have been let—with four going to contractors and three to state forces. The other projects are to be let later.

Meanwhile, the Bureau of Public Roads has sent some 18 engineers, headed by Edward C. Granley of Washington, to keep a day-to-day check on the cost and quality of the work done by the two contenders.

The engineers will send their findings to BPR for evaluation, and for a report (probably in 1953) on how best to stretch the road-assistance dollar. The competition is reported to be the first time such a close check has been kept on road-building work since construction of the Alaskan highway ten years ago.

The Bureau of Public Roads is not the only agency having its engineers on hand checking the work. The state has its own men checking the operations too; and the Carolinas' branch of the Associated General Contractors has its engineers on hand to see that all work is up to specifications.

The competition now underway may, observers say, set something of a pattern on the spending of federal and state highway funds.

• Other activities—San Francisco's Board of Supervisors has called for a study of the possibility of a $95-million freeway bond-issue to be paid off with the city's share of state gasoline tax receipts. The bond issue would provide funds for construction of freeways and trafficways now scheduled in the city's master plan.

A new Potomac River bridge is in store for Washington, D. C. The District Highways Department has asked $200,000 to start planning it, as part of a $12.5-million budget.

Three builders indicted for bribery

Three San Diego, Calif., homebuilders surrendered to the U. S. Marshal in mid-July, answering secret indictments handed down by a Federal Grand Jury which has been probing reported irregularities in Veterans Administration-insured home financing.

The arrest of the three brought to 13 the number of persons so far indicted. The other ten, whose arrests started last summer, include former officials of the Veterans Administration Local Guaranty Division in San Diego, officials and former officials of home financing agencies.

The San Diego VA-insured housing scandal received national publicity last December when the congressional committee to investigate GI home loans and education, headed by Rep. Olin Teague, held a two-day hearing in the city (ENR Dec. 27, p. 16).

The hearings put on the record testimony indicating that contractors, VA officials and loan agencies had profited by an "understanding" that added hundreds of thousands of dollars to the cost of GI homes.

The following builders were indicted by the Federal Grand Jury.

Chris A. Cosgrove, president of the C. B. M. Co., which has built dozens of major tracts throughout the San Diego area.

Howard Ralph Mueller, formerly an officer of the C. B. M. Co.

William B. Bettles, an officer of Mobilhome Corp. of San Diego.

Cosgrove and Mueller are jointly charged with offering a bribe to an official of the U. S. government and with giving false information to a government agency. Bettles is charged with bribery of a government official. All posted $2,500 bond and were released to await Federal District Court arraignment.

Richard F. C. Hayden, Assistant U. S. Attorney who has been presenting evidence to the Federal Grand Jury, has announced that he expects no more Grand Jury action until after trials of those already indicted have been held, probably in November. Hayden said there is more evidence for the Grand Jury's attention, but the U. S. Attorney's office does not have sufficient manpower to continue the work with the Grand Jury while the other cases are going to trial. Hayden would not indicate whether there may not be further arrests soon resulting from secret indictments which may already have been handed down.

Army Engineers fight charges of waste

The Army Corps of Engineers is smarting from a third attack made on the Corps by a House subcommittee studying Army civil functions.

Under fire this time is the Missouri River channel stabilization and navigation project which involves improvements along the lower Missouri a distance of 762 miles from St. Louis up the river to Sioux City, Iowa.

The House subcommittee, headed by Rep. John H. Kerr, of North Carolina, charges that the Army Engineers recklessly changed benefit-cost ratios on the project, and arbitrarily altered tonnage and savings estimates to justify the Missouri River project.

In its report, the Kerr Subcommittee asserted, "The Corps of Engineers have spent over a quarter of a billion dollars ($261,936,098 as of June 30, 1951) on channel stabilization and navigation improvements on the lower Missouri River . . . To date these expenditures have not produced navigation to any appreciable extent, and it appears that the Corps' work has actually increased floods on the river, year after year."

The Engineers, now preparing a detailed answer, regard these charges as "flimsy and unsubstantiated."

Admitting that benefit-cost ratios are often open to some dispute, they are taking another look at their estimates of benefits on the project. But they feel the charge that they created floods is "patently absurd."

• Division report criticized—Basis for much of the Kerr Subcommittee's criticism was a report which dated back to December, 1949, when the division engineer for the Missouri River division directed that the project be re-evaluated, in terms of navigation benefits, land accretion and betterment, erosion and other facets. The division engineer turned to the Board of Rivers and Harbors for assistance in making the study.

There are two good reasons for the making of this report, according to the Engineers.

- **The Missouri River channel stabilization and navigation project has a long history.**
- **Scope of the work to be done has been changed several times.**

The navigation and bank stabilization work on the 762 miles of the lower Missouri River is in two parts; the portion of the river from the mouth to Kansas City and the second portion, from Kansas City to Sioux City.

Work first started under the River and Harbor Act of 1912 which authorized a six-foot channel from St. Louis to Kansas City. The channel width was fixed at 200 ft in the 1925 River and Harbor Act and the depth and width of the channel were increased to 9 ft and 300 ft respectively by the 1945 River and Harbor Act.

The work from the mouth of the river at St. Louis to Kansas City included revetments, dikes, removal of rock from the river bed, cutoffs to eliminate long bends, chute closure dikes and removal of snags. This portion is 79% complete.

The work from Kansas City to Sioux City was first authorized in 1927, for a 6-ft channel, 200 ft wide. In 1945, the dimensions were changed to 9-ft depth and 300-ft width. This work is about 59% complete. Both portions are scheduled for completion in 1960.

• Reason cited—With this history, the division engineer wanted to bring the project up to date. It was this report which stirred the present controversy.

Commented one high-ranking member of the Engineers, "Instead of having our knuckles rapped, we should be praised because it shows the Corps keeps a check on projects, re-evaluates them as conditions change."

To re-assess the project, the division engineer asked the Board of Rivers and Harbors to make a study. When the report came back in July, 1950, the Missouri River Division analyzed it, and revised the figures, adding 10% to the potential tonnage and 10% to the annual savings.

The Office of the Chief of Engineers studied both estimates and the figures were again upped. Potential tonnage figures were boosted 25% and the time when full benefits would be realized was changed from 50 years to 20 years.

Curtain comes down

The last construction investigating committee closed last week when the Teague committee of the House recessed its hearings on veterans' housing in and around Washington, D. C. (ENR July 10, p. 23).

No charges resulted from this investigation, but committee members felt that there was a definite aura of "friendship and favoritism greatly aggravated by incompetence." Consensus at the last hearing was that most of the complaints against the builders and the VA inspector were justified, but that the complaints were due mostly to poor inspection and not to fraud or collusion.

In part, it was these revisions which prompted the committee to comment in its report that "It is apparent that the Corps of Engineers has treated the known facts with respect to this Missouri River project most lightly and, in some instances, recklessly. The committee is thoroughly dissatisfied with the Corps' performance and feels that such substantial doubt has been cast upon the Corps' methods that their results are hardly worthy of credence."

• The seven-hour answer—The Corps is inclined to doubt the sincerity of the committee in making such a critical report. There is a feeling that at least part of the criticism stems from election-year politics.

There is another bitter point in the dispute. While Lt. Gen. Lewis A. Pick was called before the committee to testify, he and the engineers at the meeting were confronted with a lengthy, somewhat scattershot attack which would have required detailed analysis to answer.

The Engineers were given seven hours to reply. Unable to make their rebuttal in that time, they found their chance gone—at least for the moment—because the subcommittee filed its report.

The Engineers make a couple of other points: "The project won't be completed until 1960." The comment: "You wouldn't criticize the efficiency of a railroad until it was finished."

The Kerr Subcommittee's cost figure, still being analyzed by the Engineers, may include Fort Peck Dam, a multi-purpose project which, in the opinion of at least one responsible official, "reduced the flood level two feet at Omaha and Council Bluffs this spring and averted disaster."

One final point: It is not unusual for the division engineer to revise a report from the Board of Rivers and Harbors, nor is it uncommon for the Office of the Chief of Engineers to revamp the figures submitted by division engineers.

"The Corps of Engineers has never felt that it is infallible. But we do know that in case after case, benefits have been greater than we estimated. We do know that while a few, very small projects have turned sour, we have never been wrong on a major project. And, until we can complete our report, we are certainly not ready to admit that we are wrong this time either."

Earthquake hits California

California's worst earthquake in nearly half-a-century rocked the Tehachapi Mountain area early in the morning of July 21, killing at least 12 persons and causing a yet undetermined amount of damage to buildings, highways and railroad lines.

The shock was felt from San Francisco to the Mexican border, and inland to Nevada, but it centered in the little town of Tehachapi (3,000 pop.) where buildings were leveled and where all the loss of life occurred.

Seismographic readings showed that the quake was topped by the San Francisco earthquake of 1906, but it was stronger than the Long Beach earthquake of 1933 or the Santa Barbara shock of 1925. California Institute of Technology seismologists rated its intensity at 7½ on a scale of 10, compared to 6¼ for the Long Beach quake and 8¼ for the San Francisco quake. However, in the Long Beach earthquake 100 persons were killed and damage ran to $40 million, while at Santa Barbara 11 were killed and damage was $10 million.

If the center of the new quake had been closer to urban areas, devastation would have been "tremendous," the seismologists said.

The severe shock started at 4:53 A.M. PDT and lasted 15 to 20 sec. Lesser tremors followed over the next 15 minutes.

• Damage surveyed—The Division of Highways, which moved in to check the roads, says there are no bridges reported wrecked but that slide conditions are general in the mountain areas around Tehachapi.

Four main roads in the area—U. S. 99, 399, 466, and the Walker Pass road—were temporarily blocked.

Earthslides on U. S. 99, "The Ridge Route," are described by highway patrolmen as being as much as 25 ft high at one point.

At the State Prison for Women near Tehachapi, buildings were in such bad shape that the women were not allowed back into them.

At the town of Tehachapi, an eyewitness said, "The earth rocked convulsively and entire fronts fell off buildings. Men and women poured out. At one end of the street, a water tower collapsed and water streamed into the street."

Damage in the Los Angeles area was limited—consisting mostly of broken windows, falling plaster and damaged power distribution lines.

Officials of the county flood-control district tentatively reported no damage to dams or other installations, pending detailed inspection.

The Los Angeles Department of Water and Power had some 70 temporary interruptions on primary distribution lines. Some minor damage was done to street water mains. The department's aqueduct to the Ownes River in the Sierras apparently was undamaged.

The Southern Pacific Railroad's San Joaquin valley line was closed between Tehachapi and Bakersfield by slides and tunnel damages. Four tunnels at the 2,700-ft level were damaged in an area of two miles between the railroad stations of Bealville and Cliff on the north slope of the Tehachapi Mountains. Equipment was moved in to repair the damage but the company was unable immediately to estimate what the financial loss would be. Passengers were being shuttled by bus.

Reshuffle of steel allotments planned

Ten men, five from industry and five from the National Production Authority, met last week in Washington to settle government policy on a hot question: Who will get steel in the fourth quarter?

They raised some key questions that will have to be answered this week when the Steel Products Industry Advisory Committee goes to Washington to talk to NPA.

One thing is certain: First call on steel will go to military construction and the Atomic Energy Commission.

Schools, hospitals and highways are likely to get the next highest priorities.

The government reasoning is that after the second quarter, the industrial expansion program was over its peak and its "take" of steel, copper and aluminum was due to decline. Therefore, deferring some industrial building is not likely to cause any serious consequences. And the steel that would be diverted could be used for schools, hospitals and highways where public pressure is strong.

Commercial construction is a knottier problem. Public pressure is not the same as it is for schools and hospitals. But, NPA had previously relaxed curbs on commercial building. To clamp these curbs back on—with the strong possibility that they will be pulled off again in six months—would bring on plenty of problems. Readjustment of third quarter allotments is certain to complicate fourth quarter estimates.

NEWS BRIEFS

• NSPE opposes extension of public power—The National Society of Professional Engineers has adopted a resolution calling for the development of the nation's natural resources by private enterprise. It points specifically to the Niagara River power development in New York and the Hells Canyon on the Snake River in Idaho as instances where "legislation is being considered that violates this principle."

"Professional engineers are deeply concerned about the creeping socialism which is engulfing many areas of our nation," says L. L. Dresser, NSPE president. "The government is taking over an increasing number of engineering functions formerly the province of private enterprise. We feel that the time has come now to reverse this trend."

• Contractor wins judgment—The U. S. Court of Claims has awarded Reginald B. Potashnick of Cape Girardeau, Mo. a $119,062 judgement against the government for work he did in constructing an airport at Hot Springs, Ark. Army Engineers had attempted to charge him $14,343 for being late in finishing the job. The court said the fault lay with the Engineers because the site contained considerably more hard rock than the Engineers had disclosed in getting Potashnick to submit a bid on the contract.

Engineer faces hearing

The Florida State Board of Engineering Examiners last week announced it had postponed "for about a month" hearings into malpractice charges against Laurence C. Farrant, Miami consulting engineer.

The hearings originally had been scheduled for July 21, but attorneys for the board said a new date would be set about Aug. 21. Exact charges against Farrant—already subject of controversy for his work in Florida—have not been disclosed.

In conversations with newsmen, however, Farrant commented that he thought they stemmed from his work on three recent projects—a waffle-block warehouse at Ojus, Fla. (ENR May 22, p. 25); a municipal bandshell at Hollywood, Fla., that developed cracks; against Laurence G. Farrant, Miami Beach, for which city building inspectors would not issue a Certificate of Occupancy.

NATIONAL LABOR RELATIONS BOARD MEMBERS, who signed the decision which brought a sharp reaction from members of the Dunlop board. (Left to right) Paul M. Herzog, chairman; Ivar Peterson; and Paul L. Styles. The board based its decision on Taft-Hartley.

Dunlop board ruling upset by NLRB decision

A contractor who is not legally obligated to comply with the decision of the National Joint Board for Settling Jurisdictional Disputes will not be prevented by the Taft-Hartley law from making his own work assignment.

This is the rule even though the contractor is a member of an association which agreed to the AFL-construction industry machinery for settling jurisdictional disputes. It makes no difference, either, that the Joint Board, headed by John T. Dunlop, may have issued a decision.

This is the decision of the National Labor Relations Board in a dispute between Empire State Painting & Waterproofing Co., Buffalo, and the AFL operating engineers over the operation of an air compressor used in chipping concrete from a wall surface preparatory to painting.

Richard J. Gray, president of the AFL Building Trades Dept. and a member of the Dunlop board, attacked the decision as to whether any contractors are bound to comply with the rulings of the union-industry board.

• Some are bound—Last October, in a case involving Manhattan Construction Co., NLRB held that it would not intervene in any jurisdictional dispute where the contractor and union were covered by the Dunlop board. That is because Taft-Hartley requires NLRB to dismiss any jurisdictional dispute charges where the parties have "agreed upon methods for the voluntary adjustment of the dispute." NLRB construes the Dunlop board to be an "agreed upon method" for settling such disputes.

But NLRB found that Empire State had never agreed to the Joint Board plan, which was set up in May, 1948 (ENR March 18, 1948, p. 69), and re-established in October, 1949. The 19 AFL building trades unions, the Associated General Contractors and eight specialty contractor associations signed the agreement setting up the plan.

NLRB, therefore, ruled that under Taft-Hartley the operating engineers could not force Empire State to hire one of their union members to operate the air compressor.

The Dunlop board assumed it had jurisdiction over the Empire State situation because that contractor is a member of the Painting and Decorating Contractors of America, which signed the agreement in 1949.

• Poor handling—Dunlop and Cole told ENR that NLRB's decision was the result of a mixup and poor handling by local union attorneys.

The union attorney neglected to acquaint NRLB with an exchange of letters between the unions recognizing air compressor work as that of the operating engineers, or with the Joint Board decision awarding the work to the engineers. The attorney also neglected to show NLRB that the Painting and Decorating Contractors of America had, by resolution, endorsed the Joint Board and committed its members to its rules.

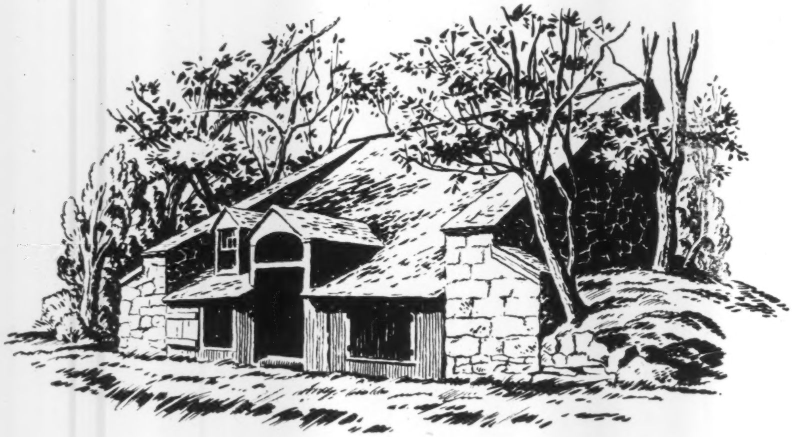
Some specialty contractors are bound to the Joint Board's jurisdiction by action of their association, where the association's rules permit it. Some, like Associated General Contractors, cannot bind their members. These associations have obtained stipulations from individual contractors pledging cooperation with the Joint Board.

• Case history—Trouble with the operating engineers began in November when Empire State began painting a warehouse in Buffalo. On this job it assigned seven men to chip concrete from the wall; an air compressor was necessary to operate a chipping hammer. The contractor used a laborer, who spent most of his time on manual labor, to turn the compressor on and off and to oil it.

The operating engineers filed a case with the Dunlop board when Empire State refused to give the work to one of their members. It issued a decision to the effect that, under existing decisions and precedents, the work properly belonged to an operating engineer. Empire State ignored the decision. When the union picketed, the contractor removed the air compressor. He then filed a charge with NLRB accusing the operating engineers of illegally trying to force him to assign work in violation of Taft-Hartley.

(Labor continued on page 31)

Time to light another candle...



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NLRB allows union as agent, circumvents T-H injunction

The National Labor Relations Board has approved a construction industry union-recognition contract which seems to get around the Taft-Hartley law. T-H says contractors may not sign labor contracts with a union before work has begun and a majority of workers favors the union.

The board, in a recent decision, okayed a contract which gives the union recognition as bargaining agent for the jobs under its jurisdiction. The contract was made when no other union was trying to represent the same craft; and jobs were not denied to workers not in the contracting union.

NLRB construes the contract as giving recognition to the union as bargaining agent for its own members only. In this particular case, the board decided that the union and the employer understood that the contract was to apply only to union members. And in actual practice, the employer hired men who were not union.

• **Case**—The case involved Consolidated Builders, Inc., and Local 701 of the Operating Engineers, AFL, as defendants to a charge brought by a rival AFL union, the International Association of Machinists.

Consolidated made a contract to bargain with Local 701 for jobs within its jurisdiction before work began on the $28-million Detroit Dam near Detroit, Oregon.

IAM charged that the contract gave exclusive recognition to Local 701 before that union represented a majority of the employees and that Consolidated enforced a closed shop hiring practice under its terms.

But the board, rationalizing the wording of the contract with established custom in the building trades, said the contract did not give exclusive recognition to the engineers.

The board supported its position by listing Consolidated's hiring practices: Employees within the disputed classifications were hired without requiring membership in or clearance from Local 701. Others were hired through operating engineers who were not members of that union. And workers were recruited from former employees and through manufacturers' representatives as well as through various unions.

• **Mistake**—At the same time, Consolidated did condition hiring of three particular applicants on union membership. The board ordered Consolidated to offer them jobs, to make up whatever they had lost and stop such discrimination. But the contract itself was not touched by the order.

Contractors and the construction unions have been anxious to get relief from Taft-Hartley provisions. One attempt was made in this session of Congress. It was the so-called Taft-Humphrey bill to amend Taft-Hartley.

Among other proposed changes recognizing special conditions in the construction industry, the bill permitted contractors to make bargaining agreements with unions before work began on a job. Although it passed the Senate, the bill's counterpart was buried in the House Labor Committee.

• **Other actions**—In other actions the board made the following decisions:

• Collier Construction Company, a transmission line builder in West Virginia, Virginia, Ohio, Michigan, Indiana and Pennsylvania, was ordered to stop enforcing closed shop sections of its contract with International Brotherhood of Electrical Workers, AFL. Company and union have to pay back pay to 61 workers discharged either for nonmembership in IBEW or for encouraging membership in two opposing unions, the Construction General Laborers, Local 1353 and the International Hodcarriers, AFL.

• Ozark Dam constructors and Flippin Materials Co. were ordered to stop discriminating in reinstating former employees who struck the Bull Shoals Dam operation at Fort Smith, Ark. The two companies were found to be one and the same employer. They must reinstate, with back pay, 19 employees, offer back pay to 74 employees and must not discourage membership in joint council of several AFL building unions. Charges of discrimination against 51 other employers were dismissed.

3rd month of strike brings violence

Violence is flaring repeatedly as the striking AFL operating engineers union continues its strike into the third month in Philadelphia and carries its dispute over wages and working provisions into the 16th month.

Some $100 million or more in heavy construction continues to stand still in the Philadelphia metropolitan area and the end of the costly rhubarb is nowhere in sight. The contractors say union demands are impossible.

The Building Council has refused to back the engineers or sanction the strike.

• **Rough stuff**—James Owens, a staff member of the Evening Bulletin, was set upon at a general meeting of the union to which he had been assigned He was roughly handled. He was pushed around, some of his clothes were torn and he was threatened with physical attack before saner members came to his rescue. The union, through its counsel, apologized to both Owens and the newspaper.

Police of Cheltenham township just outside Philadelphia in nearby Montgomery County stepped in and arrested Jerry Leone, a union business agent, after they charged him with halting work on a construction project. He was fined $10 and warned not to repeat the performance.

Meanwhile, fists fly almost daily at projects in and around the city as leaders of a back-to-work movement within the union attempt to rally the members to return to their jobs. Some members have returned despite threats and intimidation but most are out.

The back-to-work leaders were haled before the union's executive board but only one appeared. He denied sponsoring the movement but said he was not in favor of prolonging the strike.

About 30 other members were also ordered before the union board. Only 11 appeared and said they thought the strike was over. All said they are at present in conformity with the union's order.

Mason builders agree

A final settlement was effected between the Building Contractors' and Mason Builders' Association of Greater New York, Inc., and the bricklayers of New York City. Terms of the settlement were the same as those agreed upon by another contractor group, Associated Brick Mason Contractors of Greater New York, Inc. (ENR July 10, p. 26 and July 17, p. 31).

The two-year contract calls for $3.55 an hour plus fringe benefits retroactive to June 1.

Operating engineer "rebels" sue union, ask over $3 million for damages

Rebels in the International Union of Operating Engineers at Paducah, Ky., site of a half-billion-dollar atomic works, have filed a $3,250,000 damage suit against the union and its representatives.

Their action stems from some of the same complaints that prompted the last Kentucky General Assembly to pass a law aimed at this AFL union. The suit, filed in McCracken Circuit Court, accused the union of denying self-government to its members; calling strikes without their consent; and extorting excessive initiation fees and dues without giving any benefits in return.

The requested judgment includes $1,050,000 for loss of wages resulting from strikes and $200,000 for recovery of fees and dues.

The remaining $2 million is for punitive damages and for "humiliation and embarrassment" caused partly by "false and malicious charges" that the rebels are "Reds and Communists."

The suit was filed in the name of the Operating Engineers of Kentucky for Local Autonomy, a group set up last June to seek a local charter from the IUOE.

At present all the workers who run the hoisting and portable machines on the Paducah areas's vast construction projects are represented by Operating Engineers Local 181, with headquarters at Evansville, Ind.

• **Efforts failed**—John C. Lovett, Benton, Ky., attorney for the insurgent group, said the suit was filed because all efforts to get a separate local had failed.

These efforts, he said, included personal pleas to William E. Maloney, Washington, IUOE general president. "All power," says the suit, "is vested in him."

The autonomy-seeking group claims to have signed up about 1,600 of the 2,500 workers for whom the IUOE holds bargaining rights in the Paducah area.

The 1,600, said Lovett, represent about 90% of the operating engineers on the Tennessee Valley Authority's Shawness Steam plant project, and 50% of those on the atomic energy project.

Last month the Marshall County Grand Jury indicted the IUOE for failure to charter a local within the State of Kentucky. Marshall and McCracken are adjoining counties.

The indictment, scheduled for trial during the October court term, is based on the last legislature's act requiring all labor organizations having at least 100 members in Kentucky to charter a local in the state.

But in another court this month, the union won a victory. Jefferson Circuit Judge Macauley L. Smith held that the union has met the law's requirements because it has a local in Louisville for stationary engineers. Smith's decision will be taken to the Court of Appeals.

Lovett said the IUOE has been afraid to call strikes since the rebel movement gained strength, but that earlier the union staged 14 work stoppages at the atomic-energy and steam-plant projects.

WSB moves against 6 more, cracks down in Miami area

Stabilization officials have cracked down on Florida building contractors for paying excess wages to construction workers. The Wage Stabilization Board Regional Enforcement Commission disallowed a total of $6,800 for tax deductions against five small contractors, located in Miami and Hialeah, for violations of wage-control regulations.

In Boston, WSB announced a $250-penalty against a New Haven, Conn., contractor.

Four of the Florida contractors paid $3 an hour for journeyman plasterers when the legal rate was $2.75. A fifth paid bricklayers, cement finishers, lathers and plasterers from $3 to $3.50 an hour; all were in the $2.75-an-hour wage scale.

Four of the contractors got by with penalties amounting to about half the excess wages they paid. But one got a $2,000-penalty—almost five times the amount of excess wages. This penalty was levied because the contractor refused to heed initial warnings that he was violating stabilization rules.

Under WSB regulations, a commission can disallow the entire payroll containing illegal wage payments for tax deduction purposes—not just the excess wages. But in assessing penalties, enforcement commissions consider the circumstances and attitude of contractors who find themselves in violation. The other contractors involved claimed they could not get plasterers at the $2.75 wage in Miami and said they did not know they were violating any regulations by paying the $3-rate.

The individual companies and penalties follow:

Bob Cholodenko: $2,000-penalty on payroll of $8,000; excess wages paid: $478 to plasterers.

Momar Construction Co.: $1,250-penalty on payroll of $27,900; excess wages paid: $2,500 to cement finishers, bricklayers, plasterers and unskilleld labor.

Blue Ribbon Building Co.: $1,700-penalty on payroll of $41,000; excess wages paid: $3,800 to plasterers.

Fred W. Wynn: $250-penalty on payroll of $3,858; excess wages paid: $275 to plasterers and foremen.

L. & B. Plastering Co.: $1,785-penalty on payroll of $32,100; excess wages paid: $2,681 to plasterers.

Jolyn Construction Co. (Conn.): $250 penalty on payroll of $12,817; excess wages paid: $133 to bricklayers and blocklayers.

Union's real estate

Washington's newest air-conditioned apartment building is an eight-story, 556-unit structure built for the AFL International Brotherhood of Electrical Workers. Fully occupied, it is located close to downtown, next to the IBEW's eight-story office building.

Legal owner is 1,500 Massachusetts Avenue, Inc. However, the stock is wholly owned by the Electrical Workers Benefit Association, in which 250,000 of IBEW's 450,000 dues payers are members.

The building was built and is managed by Ring Engineering Co. With 90% of the units efficiency-type, it was built so that it could be converted to a hotel. There is a $4,424,800 FHA-insured mortgage.

Strike briefs . . .

• **Mobile, Ala.**—The three-day strike of Mobile's building trades was settled this month with workers getting an immediate 20-cent-an-hour wage increase and 5 cents in 60 days. The union had demanded a 25-cent increase, while the contractors had offered 16 cents.

• **Delaware**—Major building projects in northern Delaware are being delayed by the sheet metal strike, which has entered its third month. The strike is the subject of a court battle. Among the projects being delayed are seven school construction projects.

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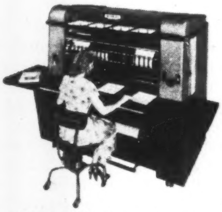

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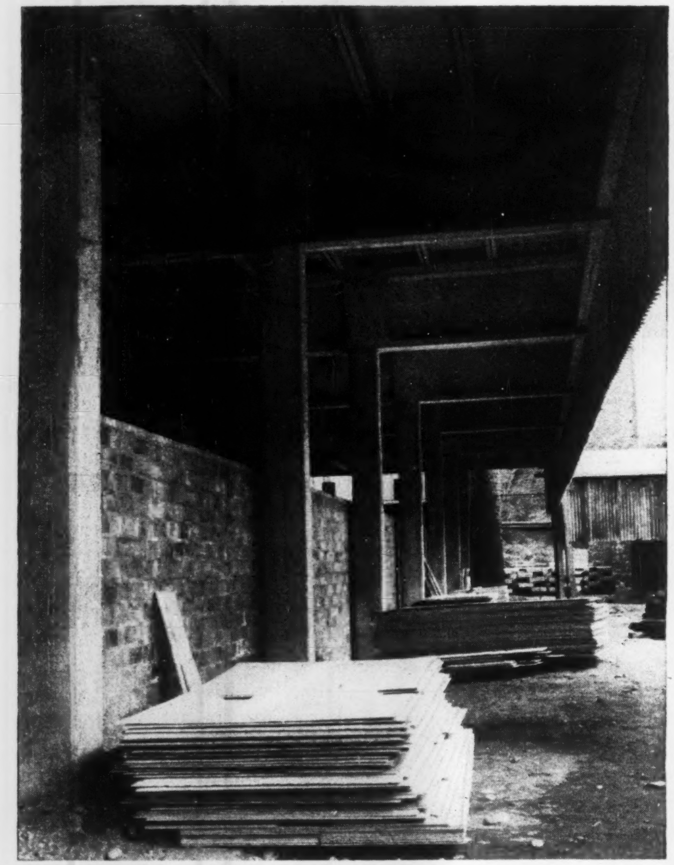


COLUMNS and 20- and 30-ft long channel-shaped roof slabs were cast in Tacoma, Wash., 35 mi from site. Double cantilever 61-ft girders were poured at job.

CONNECTIONS were problem. Here, worker grouts in ⅞-in.-dia dowels cast in column, extending through girder.

WEDGES plumb columns first. Grout is poured after girders are placed.

Precast plant built in earthquake region

Designing an ordinary reinforced concrete building in earthquake country is trouble enough. But when all components are precast, unusual measures are called for, particularly where the connections are concerned.

The engineers went even one step better for a new 50,000-sq ft, one-story brick manufacturing plant near Tacoma, Wash. They reduced the actual number of connections, first by employing cantilevered girders; second, by designing precast ribbed slabs to span the 20 ft between these members, thus eliminating joists that would be necessary for a roof slab.

The completed structure, minus mechanical equipment, cost only $2.50 psf. Even considering that the ground serves as a floor and only a portion of the building is walled in, this figure is quite low for the Northwest.

• **Why precast**—The new fire-resistant factory, owned by Builders Brick Co., is built right where the company's timber building burned down in 1950. It is located in the isolated community of Clay City, about 35 miles from Tacoma. As the name implies, that's where the clay is and why the plant is so remotely situated.

Since the nearest source of construction labor and materials was 35 miles away, precasting seemed an obvious choice. The columns and roof slabs could be cast in Tacoma, thereby holding labor at the site to a minimum. Because the girders weigh up to 20 tons and are more than 60 ft long, they had to be cast at the Clay City site.

• **Connections**—Columns, designed to take all seismic forces are 16x16 in. They are joined to girders with four ⅞-in. round dowels that are cast integrally with the columns.

After two columns were wedged and plumbed in 2-ft high concrete boxes that rested on the footings, the girders were erected, dowels being slipped through 3-in. dia holes extending through the girder. To make this operation easier, dowels were cut off at slightly different heights. Dowel holes and footing boxes then were grouted in.

Abutting ends of girder cantilevers are connected to each other by two ⅞-in. bars, 6 ft long, placed in keyways at the top of each girder.

Roof slabs are channel-shaped sections 4 ft wide and either 20 or 30 ft long. Longitudinal ribs are 11½ in. deep, as are the diaphragms placed at the ends and every 10 ft inbetween. All elements are 2 in. thick.

A 6-in. opening is left between two slab ends where they rest on a girder. Hooked ¼-in. dia reinforcing bars from the slab ribs project into this space, as do stirrups from the girder. In addition, ¾-in. half-round bars, placed in grooves between roof slabs, are carried across the 6-in. opening at the girder. The slab-to-girder connections were completed with grout.

Slab-to-slab connections are accomplished with the aforementioned ¾-in. half-round bars grouted into grooves at the top edges of the channels. The bars are 4 ft long.

• **Precasting**–Over 600 of the channel-shaped roof slabs were cast in Tacoma. Reinforcing consists of ¼-in. round bars in top and flanges. A 6½-sack concrete mix was used. Forms were stripped the day after pouring, but the slabs were cured for about a month.

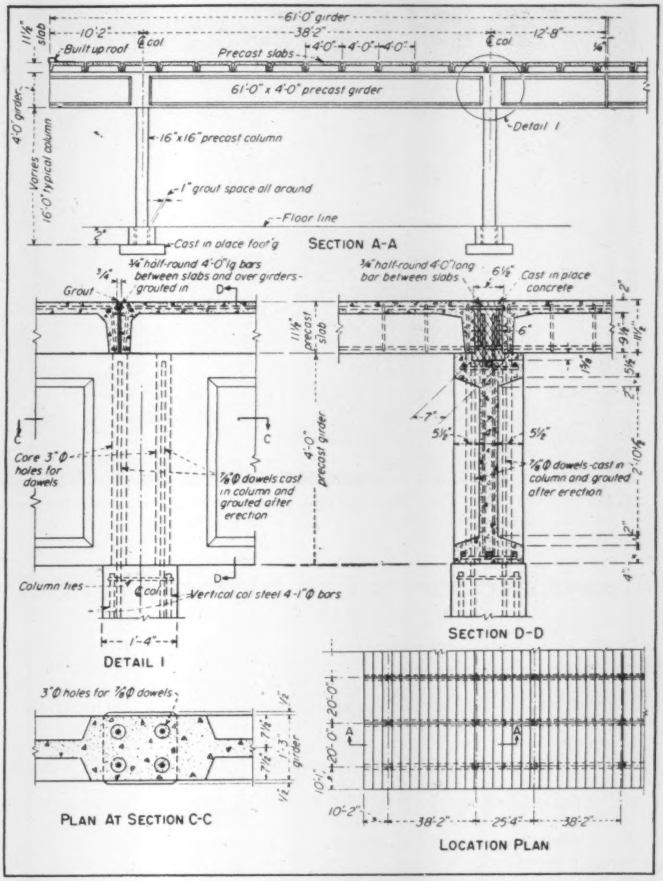
The slabs were cast upside down and trucked to the site in this position. Two 1-in.-dia pipes cast in each end of the 20-ft sizes and in the diaphragms of 30-footers, facilitated crane-handling on the job.

Because the columns are designed to take all the seismic forces, they are larger than normal, measuring 16 in. square. Some double columns are employed. Lengths vary from 16 ft to 22 ft 8 in.

The columns were cast six at a time. Maximum re-use of forms was attained by moving the end dams to establish the desired length. Reinforcing consists of four 1-in. round bars.

Girders were cast on the job, as near as possible to the point where they were to be erected. All are 4 ft deep and of modified I-section.

Most of the girders are 61 ft long, with cantilevers at both ends. The center span is 38 ft 3 in. Cantilevers measure 12 ft 8 in. and 10 ft 2 in. Three 1⅛-in. square bars in the bottom flange provide the principal reinforcing. Stirrup steel extends beyond the top to tie into the roof slabs.


61'-0" girder
11½" slab
10'-2"
38'-2"
12'-8"
℄ col
℄ col
Built up roof
Precast slabs
4'-0" 4'-0" 4'-0"
¼"
61'-0" x 4'-0" precast girder
4'-0" girder
Varies 16'-0" typical column
16"x16" precast column
Detail I
1" grout space all around
Floor line
2'
Cast in place foot'g
SECTION A-A
¾" half-round 4'-0" lg bars between slabs and over girders - grouted in
¾"
Grout
D
11½" precast slab
4'-0" precast girder
C
Core 3"Φ holes for dowels
⅞"Φ dowels cast in column and grouted after erection
Column ties
℄ col
Vertical col steel 4-1"Φ bars
1'-4"
DETAIL I
¾" half-round 4'-0" long bar between slabs
6½"
Cast in place concrete
6"
2"
9½"
11½"
1⅞"
5½"
2"
7"
5½"
5½"
⅞"Φ dowels-cast in column and grouted after erection
2'-10½"
2"
4"
SECTION D-D
3"Φ holes for ⅞"Φ dowels
½
7½"
7½"
1'-3" girder
½
PLAN AT SECTION C-C
20'-0"
20'-0"
10'-1"
A
A
10'-2"
38'-2"
25'-4"
38'-2"
LOCATION PLAN

SEISMIC FORCES were important factor in connection design. Note how double cantilever girders reduce number of column-to-girder connections.

• **Erection**–Columns were lifted by a rubber-tired crane and placed in the 2-ft high boxes that rest on 12-in. thick footings. Walls of the boxes are 8 in. thick and reinforced. Wooden wedges were driven between a column and box walls to hold the column in place temporarily.

After two such columns had been plumbed, a girder was placed on top. Then another pair of columns and girder were erected in the adjacent column line and roof slabs were placed at both ends of the girders. A final check on alignment of columns was made and then grout was poured into the footing boxes and girder holes. Placement and grouting of the rest of the roof slabs completed the bay.

After all the slabs were connected, built-up roofing was laid and topped with gravel.

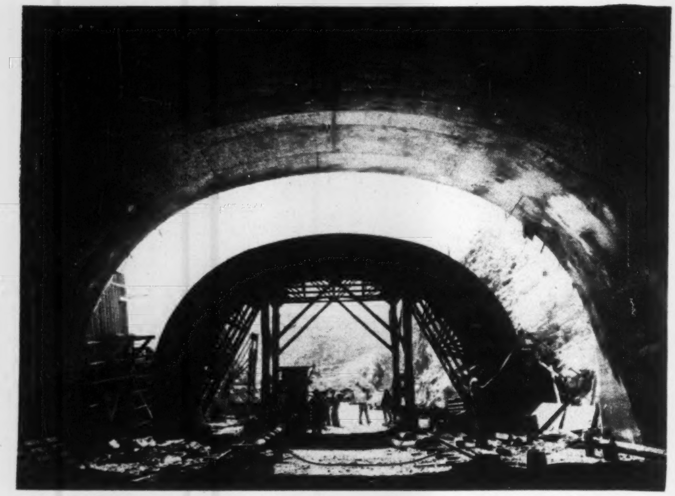
The only finished floors in the factory are below three 38x105-ft dryers. Concrete beams support 7x7-ft slabs 3 in. thick, all precast in Tacoma. Below the floor is a 3-ft plenum. Air circulates into the dryers through 8x8-in. wedge-shaped holes in the floor slabs.

There is also a plenum between the roof and ceiling of the dryers for air circulation. Steel trusses, forming this space, support the roof on their top chords while dryer ceilings are attached to the bottom chords with steel rods.

Both roof and ceilings are of asbestos-cement board, the roof having, in addition, 2 in. of insulation.

The dryer walls and the one building wall are composed of structural clay tile.

Powell & Eldridge of Seattle were the consulting engineers. The general contractor was Sam Bergesen, who also handled the precasting in Tacoma. In charge of the job for Builders Brick Co. were Edward Burkhalter and L. J. Leitch.



WAITING OUTSIDE, form Number Two is ready to move in through the first section, which was concreted by Number One. (Photos by Richard Schaus)

Traveling forms line highway tunnel

FORTY-TWO-FOOT width and 24-ft height place Arizona's Queen Creek highway tunnel, on a relocation of U.S. 60 and 70 between Globe and Phoenix, in the large-bore class. The lining of such a tunnel is a major undertaking in itself.

And in this case, lining was a special operation, because the state highway department had hoped to leave the 1200-ft tube rough-cut through rock. A major fault, however, showed up, and it became necessary to let a lining contract in a hurry. Called for bids just after New Year's, the work was let to Vinson Const. Co., Phoenix, Ariz. Quickly obtaining the cooperation of Allison Steel Mfg. Co., Phoenix, Vinson put a pair of 60-ton traveling steel forms on the job in March. Because of their size and operational ease the forms are the real news in the tunnel-lining story.

The forms are each 30 ft long. Form ends lie in vertical planes, which place the ends out-of-square with the tunnel's 6.3% grade. Each form has three articulated sections—two sides and a crown. Sections have six trussed ribs, and are all-welded.

In travel position a form rides on two longitudinal wheeled bents with telescopic legs. The crown is 6 in. below its casting position and the walls are collapsed slightly inward.

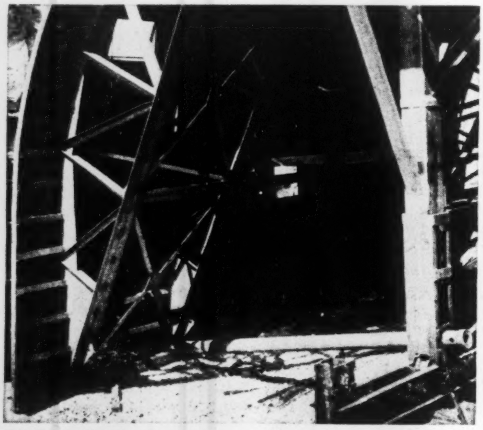
When a form reaches a new position, hydraulic jacks in the bents' legs raise the form to grade. Side sections then are pushed out to be anchor-bolted to header forms on the already-built curb. Four three-section transverse struts, with seven jacks in them, hold the walls apart at their lower edges. Struts oppose the lateral pressure of wet concrete.

As a final preparation, form-bent loads are transferred around the double-flange wheels, to prevent peening. However, the forms are designed to place vertical concrete loads on curbs. It has been found that shims inserted in the telescopic legs, to maintain jack position, can be removed by hand after a pour.

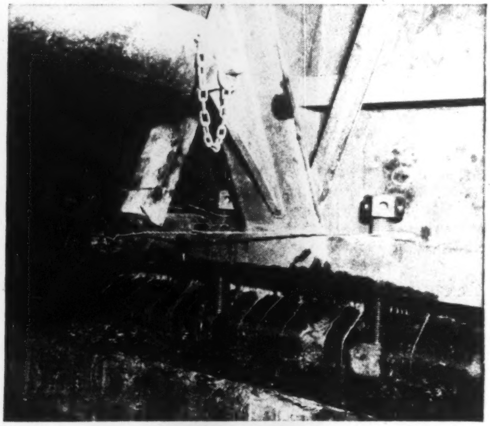
Concrete, about 125 cu yd per 30-ft tunnel section, is pumped to place through hinged doors in the form. In about 12 hours the center sections of the transverse struts are removed, so vehicles can move through to work on curbs and reinforcing ahead. Anchor bolts in the curbs hold form side sections in place.

Stripping takes place after 72 hours. Sides are folded inward from the curbs and bent legs are contracted 6 in. The whole load then is transferred back onto the wheels and the form is ready to move ahead on rails.

Here is the form-use program: Number One form, which includes



TELESCOPING leg containing jack raises form to grade; strut holds out hinged wall section.



CURB and header form take entire form load during concrete placement. Projecting pipe is a weep hole.

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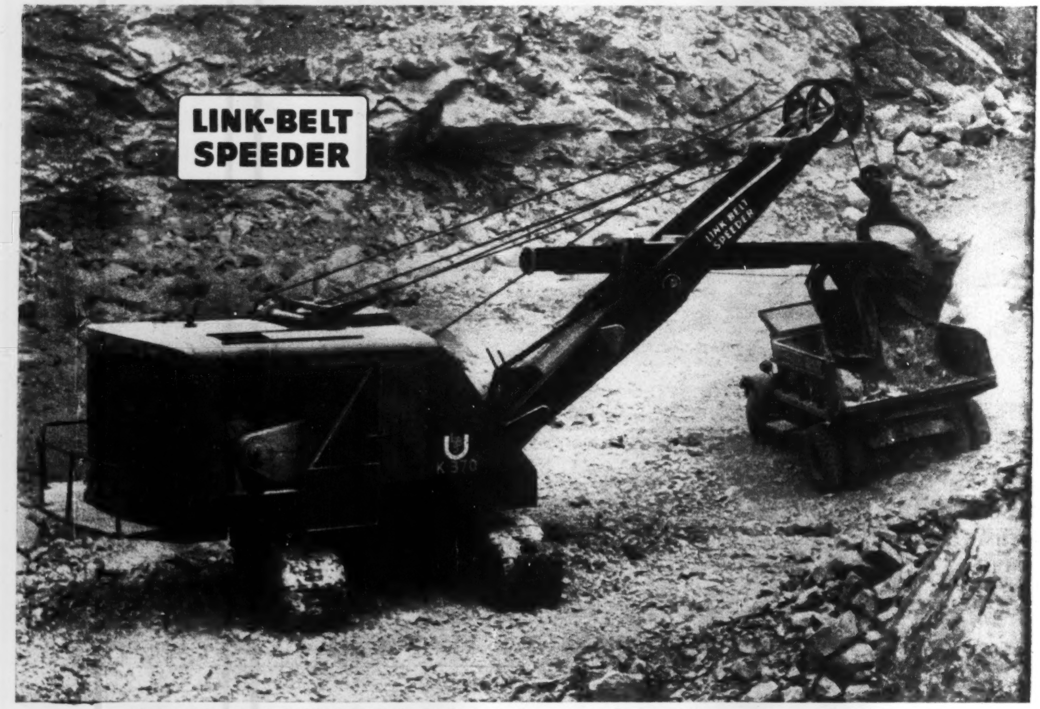

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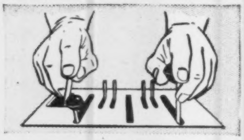

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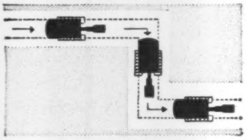

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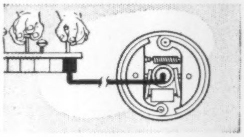

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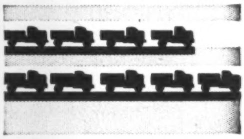

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headers at both ends, was set at the portal and headers were built up to rock shape. After concreting and stripping, the same form was moved ahead to leave a 30-ft gap, and the third section was concreted. Then, as soon as Number One went ahead toward the fifth section, Number Two form was pushed into the first gap (second section) for concreting. This form has plate extensions that fit snugly up under the previously-placed concrete.

According to J. A. Rau, who designed the forms for Allison, two critical conditions were considered: A minimum sidewall thickness (1.5 ft) that would establish a maximum rise of concrete height per hour (placing 20 cu yd per hour); and the crown load resulting from concrete in the largest top-rock overbreak.

The tunnel will be completed by placing a foot-thick layer of crushed rock on the deck. A half-inch layer of rough-textured gunite, 6 ft high, will be placed on the walls as a sort of wainscot to frustrate vandals. Then the whole lining will be given a coat of white cement paint.

L.V. Mulherron is Vinson's supervising engineer. Ray Gardner is resident engineer for the Arizona Highway Department.

Food harvest from sewage is oxidation pond bonus

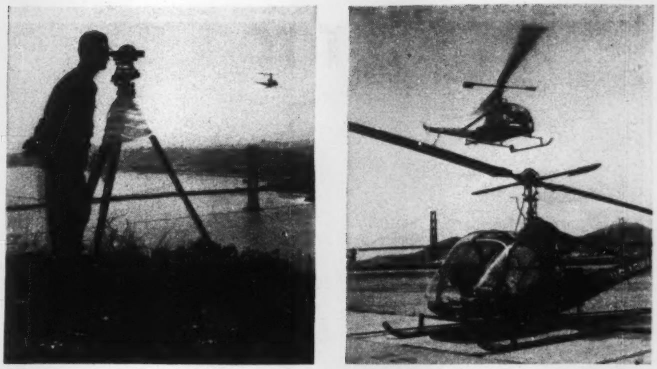
Food from sewage is the prospect of researchers at the University of California in Berkeley.

This possibility has evolved from a study of sewage treatment by oxidation ponds, in which green algae are used to supply the oxygen. The production of oxygen is accompanied by algal growth, and it is believed a continuous harvest of the algae will afford a food having up to 50% protein.

Food as a byproduct of sewage treatment may never overcome a psychological block against use by humans. But it could make animal fodder. Some 500 tons of algae could be harvested from an area on which only 30 tons of soybeans might be grown in the same period of time.

Sewage provides the nitrogen, phosphorus and carbon dioxide which algae need. It is estimated that 1 mgd might produce 1,000 to 1,500 lb of dry algae.

An 80-ft oxidation pond to test laboratory work on a pilot plant scale is now under construction. While existing ponds take 25 days to oxidize sewage, controlled experiments at Berkeley have already seen sewage converted almost completely into algae in one day. H. B. Gotaas directs the research.



TAKING A SHOT through his gun an Army surveyor goes to work on a hill top overlooking Golden Gate Bridge while his helicopter taxi goes on another assignment. Hiller H-23B Helicopters of the aviation detachment of the 30th Base Topographic Battalion make their permanent headquarters in the famed Presidio at San Francisco.

Topographic helicopters learn Alaskan terrain in California

This summer 21 helicopters, along with five airplanes and four survey companies of the 30th Base Topographic Battalion are flying out of Unalakleet, on the Bering Sea, mapping the bleak Alaskan terrain. When Fall comes they'll move south, but the hard flying won't end. The rest of the year the unit will train along California's coast, just north of San Francisco where the terrain ideally simulates the rugged Alaskan landscape.

"The only thing we lack is Alaska's tundra," is how Capt. Joseph Bermudez, unit operation officer, sums up California's northern coastline. "The area is a good test of any helicopter pilot's skill.

The unit's job is to support the survey companies by providing quick aerial transportation for personnel, equipment and supplies. In Alaska, they base at Unalakleet, but their mapping operation carries them over a large area. Separate camps must be maintained and supplied by the agile helicopters.

This Fall will wind up the unit's third year of operation, and residents of San Francisco Bay will again see the familiar "copters" whirling over Golden Gate, off again on their constant training mission.

HELICOPTER LANDS a surveyor on a bluff along California's northern coastline. The mountainous coastline, closely resembling Alaskan terrain, provides ideal training for the survey team pilots.

CONSULTANT Richard Hazen: "civil engineering, plus . . ."

INDUSTRIALIST Harold Hutton: "more mechanical and chemical engineering"

GOVERNMENT-MAN Arthur Miller: "biological sciences"

What training for sanitary engineers?

THERE ARE AREAS OF AGREEMENT, to be sure. But there still exist a variety of opinions on what constitutes a sanitary engineer, and a minimum sanitary engineering education.

Late last month, at Dartmouth College, some people from the various walks of sanitary engineering got together for a weekend conference, preceding the annual American Society for Engineering Education meeting there in Hanover.

In a panel discussion of the training problem were: Richard Hazen, of Hazen and Sawyer, New York; Harold Hutton of Wallace & Tiernan Co., Inc., Newark, N. J.; Arthur Miller, of the U. S. Public Health Service; Earnest Boyce, University of Michigan. And in a separate presentation, setting forth strong argument for the undergraduate sanitary option in civil engineering schools was Robert E. Steimke, of Georgia Institute of Technology.

Here, in part, is what they said:

• **Hazen:** Consulting engineering offices in the sanitary engineering field are concerned with water supply, sewage and waste treatment, storm drainage, and, infrequently, swimming pools. Normally, they are not concerned with mosquito control, milk sanitation, rodent control, and other similar activities that play a large part in the work of public health agencies. Therefore, the engineering graduate entering a private engineering office needs primarily good basic training in civil engineering, with as much supplementary information on sanitary engineering as his schedule will permit.

The basic civil engineering curriculum is almost too much for a four-year course, and specialization in sanitary engineering in such a course is therefore impossible.

In talking to job applicants, we learned some time ago that "sanitary options" did not mean extended training in sanitary engineering. Men who had taken other options were usually as well qualified for most purposes.

Versatility is of considerable importance. Organizations expect their young engineers to shift with the demand for services, and basic civil engineering training is more important than specialization in sanitary engineering or some other field.

Private engineering is highly competitive, and the employer must get production out of a graduate engineer almost at once. It is important—and to me somewhat unfortunate—that the engineering graduates be trained in enough practical applications so that he can be useful promptly. I say "unfortunate" only because I feel that as much time as possible should be devoted at school to those things that the practicing engineer will never take the time to study after he has left school.

These skills seem most important to me in the engineering school graduate:

1. Drafting. Too many graduates think that they can design without knowing how to draw and are afraid that if they start work at the drafting board, they will never do anything else. This is a great mistake because it is only by working out the details on the drafting board that a designer becomes proficient. The danger of being stuck on a board is much less than the danger of arriving at a position of responsibility without having learned design principles through detailed application.

2. Surveying. Speed, ordinarily, is not too important. Ability to do the job accurately without detailed instructions is more important.

3. Design. Indeterminate structures are used more and more frequently, and the engineering student should have at least some training in this procedure. But most sanitary engineering structures are comparatively simple. It has been my observation that the availability of a so-called structural department in the relatively large organization sometimes does more harm than good. Designs show little improvement over those prepared by less specialized engineers.

4. Hydraulics. Probably there is too much emphasis on empirical methods and application in most private offices and not enough consideration of basic hydraulics. Advanced fluid mechanics are not necessary and find little application in sanitary engineering work.

5. Chemistry. Few civil engineers get enough in a four-year course. We would like engineering graduates to be familiar with sanitary chemistry and the techniques; however, I doubt that adequate courses can be included in most four-year civil engineering programs, and the smattering that one gets in a very short course is of lim-

Employers differ . . .

Do sanitary engineering students need greater emphasis on basic civil engineering? Or do presently constituted courses lack mechanical and chemical emphasis?

Educators disagree . . .

Do sanitary options in undergraduate CE curricula amount to "not a row of pins?" Or do four-year sanitary courses exist that are stronger than some graduate programs?

EDUCATOR Earnest Boyce: "undergraduate option not enough"

EDUCATOR Robert Stiemke: "undergraduate program desirable"

ited value. Large consulting offices having laboratories engage chemists to do this work.

6. Equipment. At the risk of being charged with sponsoring trade schools, I want to point out the desirability of having some training in machinery, electrical equipment, piping, fittings, valves, pumps, chlorinators, and other equipment, which are every-day problems in a consulting engineer's office.

I have misgivings about a sanitary engineering curriculum in a four-year course. All civil engineering majors should have an introductory course covering the basic principles in water supply and sewage disposal engineering, including some work in treatment processes. I am a strong advocate of as many non-engineering subjects as possible in an under-graduate course. I know how difficult it is to cover adequately even the basic civil engineering training, but without that basic training, the graduate has little to offer in a consulting engineer's office.

• **Hutton:** Relatively few sanitary engineers go into industry. Until quite recently these went with three or four manufacturers of water purification or sewage disposal equipment. It is only in the last few years that other branches of industry have been employing sanitary engineers, particularly in connection with their trade waste problems. This trend should definitely continue.

It seems probable also that the sanitary engineers now being employed primarily for waste treatment problems will expand their activities in industry to include such as the supervision of water supply, industrial hygiene, etc.

The company manufacturing equipment used in the sanitary engineering field needs personnel for:

1. Original development of the equipment.
2. Design for production purposes.
3. Manufacturing.
4. Sale of equipment including work with consulting engineers and possible survey of existing plants.
5. Special assistance by sales engineering departments on large jobs.
6. Supervision of installation.
7. Servicing of equipment at the installation.

For the first three of these, mechanical and electrical engineers are best fitted. Sanitary engineers, however, do get into the remaining fields.

Duties of a sanitary engineer in industry, I believe, are more diversified than in the field of public health or in the office of the consulting sanitary engineer. In industry, the man is more likely to branch out into other, non-sanitary engineering activities.

Industry expects to find in the sanitary engineer who has received his B.S. degree: the well-rounded man, good but not necessarily top-scholastic rating, one who has participated in extra-curricular activities, and who has earned at least part of his way through school.

We find it necessary that the men be well-grounded in hydraulics, physics and mechanics. We find the greatest deficiency is in training in electricity and chemistry. The recent increase in treatment of trade wastes probably gets more into the field of chemical engineering than sanitary engineering.

Sanitary engineers with us have little or no occasion to use knowledge of bridge design, railroad engineering and strength of materials. More mechanical and chemical engineering should replace some of the civil engineering.

Finally, industry needs in the sanitary engineer a man willing to prepare for activities other than those in the strictly sanitary engineering field.

• **Miller:** Public health agencies constitute the second largest employment category for sanitary engineers. (Consulting firms are in first place, and public works agencies are third.)

We (in the Public Health Service) feel that every sanitary engineer, if he practices his profession, contributes to the nation's public health. We further feel that if we are going to have true professional and not vocational education, every sanitary engineer should primarily be an engineer . . . and, if necessary, a specialist within sanitary engineering.

If applied scientists are not to take the place of the sanitary engineers, then we must produce fewer trained technicians and more educated men. We must produce men who not only know how to be sanitary engineers but why they are sanitary engineers —men who know not only how to work with water and sewage treatment plants and their problems but also men who will know how to accept responsibility in the newer fields and who will know how to work with communities and community groups in order to help them learn about such things as fluoridation, the hygiene of housing, and many other new concepts which constitute challenges and demands put upon the modern practitioner in environmental health.

In planning sanitary engineering training of tomorrow we must consider the job of the sanitary engineer of the day after tomorrow; it is for the future that we must equip him. I would therefore like to propose five "musts"—five concepts which might be objectives for the makeup of the sanitary engineer of tomorrow in the field of public health:

1. A broad background in the physical and biological sciences.
2. A broad background in the basic enginering principles and their application to environmental health.
3. An understanding of the operation and objectives of public health work and particularly of his place on the public health team.
4. Knowledge of how to work with individuals and communities.
5. A philosophy embracing the mission of his profession.

I feel that the fourth and fifth "musts", those relating to the sanitary engineer's ability to deal with individuals and communities, and the need for the sanitary engineer to know the mission of his profession and his place in it, are considerations which should be among the most important objectives in sanitary engineering training.

There are three inseparable steps necessary to achieve these objectives first, you educators must be conscious of your own place in the profession, and the immense responsibility which devolves upon you; second is the need for selecting students who are socially conscious; and third, we might consider increasing the amount of the social sciences in our study program.

What we need to do at all times is to keep in mind the changing responsibilities of the sanitary engineer in public health. In doing this we should establish objectives for his training which are designed to meet the challenge of modern times.

• **Boyce**: We should be thankful that there is so much variation in our approach to this problem. I hope that we can get together for a discussion without feeling, as a result of our exchange of ideas, that all should conform to a common pattern. I am sure that this variation in approach is essential to progress and improvement.

It seems to me that sometimes we have a tendency to organize and plan our training programs on the basis of some job requirement without appreciating all the conditions that may later confront the student. We should keep our educational foundation broad, at least as broad as in the field of civil engineering. We narrow our foundation when we start to subdivide the field of civil engineering and reorganize an undergraduate part as a separate professional field. A man trained in a broad field can usually find his professional place, but if he is trained in a narrow field, he may be a misfit.

All that an undergraduate option in sanitary engineering can do is to introduce the student to basic biology or bacteriology—with perhaps a little application to problems of environmental health. A student completing such an option is still fundamentally a civil engineer, and he should not be considered a sanitary engineer any more than a structural major should be regarded as a structural engineer. Such identification should follow years of specialized experience or perhaps a fifth year of further study.

Sanitary engineering started with the development of an engineering interest in chemistry and biology and their application to the problems of environmental health. Many of the early problems related to water supply and sewage disposal—both definitely in the field of civil engineering. Subsequent developments have extended the field of environmental health to include problems well outside what is usually regarded as civil engineering—as for example, the field of atmospheric pollution—a field of equal interest to mechanicals and chemicals.

I think that sanitary engineering education should be regarded principally as a field for graduate concentration and open to qualified engineering graduates interested in the many aspects of environmental health—regardless of whether they come with a chemical, mechanical, or civil engineering training foundation.

• **Stiemke**—The day after the panel discussion, the group reconvened to hear Robert E. Stiemke, director of the school of civil engineering at Georgia Institute of Technology, expound his "minimum requirements for sanitary engineers." And Professor Stiemke was emphatic:

"I endorse (the plan whereby the student) completes the requirements for a civil engineer at the same time he becomes a partial specialist as a sanitary engineer.

"In general, there is little justification for specialization at the undergraduate level of civil engineering. But over 40 schools offer (strong options) in sanitary engineering."

Professor Stiemke sets forth the following as minimum requirements for the undergraduate sanitary option, in addition to chemistry, hydrology, hydraulics, water supply and sewerage studied by the regular CE student: animal biology, general bacteriology, organic chemistry, water and sewage chemistry, water treatment, sewage and industrial waste treatment and sanitation.

To make room for these in the undergraduate course, he would exempt CE's in the sanitary option from taking: thermodynamics, applied mechanics, transportation, soil mechanics, advanced surveying, and electrical engineering. He admits the importance of all of these, but claims they are not as important to the sanitary engineer as those of the first list.

"It has been recommended that sanitary engineering be considered strictly as a graduate degree without undergraduate specialization," continued Stiemke. "There are several reasons why this is not desirable:

1. "Advanced courses in sanitary engineering cannot be offered profitably until courses (recommended above for undergraduate specialization) are completed.
2. "Men graduated with a (bachelors) degree in sanitary engineering can compete successfully for jobs in civil engineering.
3. "I think the undergraduate sanitary engineer has a broader instead of a narrower training than the straight civil engineer.

Professor Stiemke concludes:

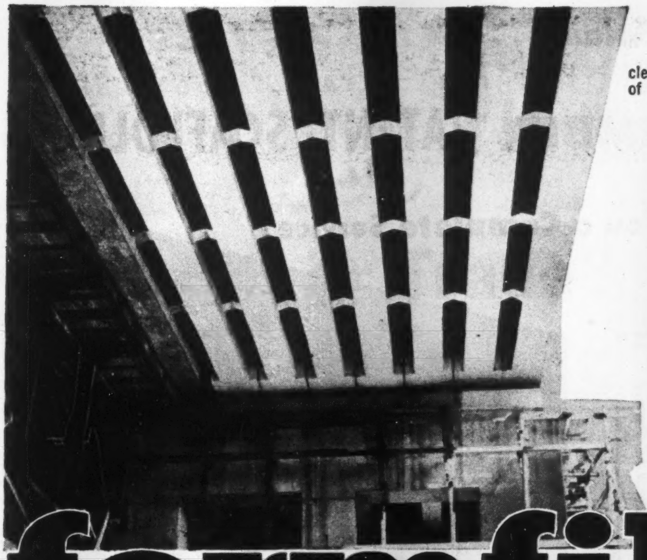
"The four-year curriculum in sanitary engineering. . . has a definite place both as a terminal curriculum and as the only logical base on which to build a graduate program. Some schools now grant master's degrees in sanitary engineering for work nearly identical to that completed by an undergraduate in a good bachelor's program. To fill vacancies in sanitary engineering, we should train students at the bachelor's level to do the job expected of them at a salary acceptable to one with a bachelor's degree. Minimum requirements can be met in an undergraduate program."

Salt water research gets new assistance

The federal government's new Salt Water Research Program got its first money July 9 when President Truman signed a bill appropriating $125,000 for fiscal 1953. Purpose of the program, for which Congress authorized appropriations of $2 million is to find economical ways of reclaiming salt water and brackish water for agricultural and industrial use.

Assistant Commissioner of Reclamation Goodrich W. Lineweaver will place research contracts with universities, private industry and other organizations.

The program aims to correlate individual water research projects of government and private industry. Up to now, the separate efforts have been going ahead on their own and without very much interchange of information.



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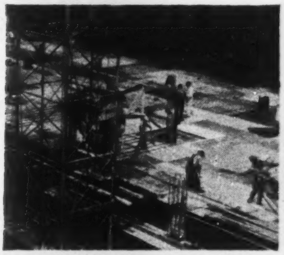

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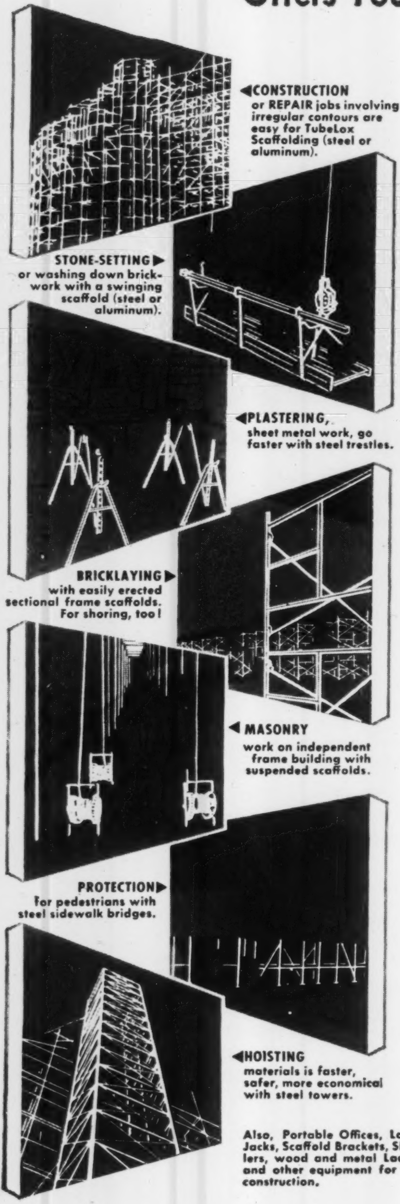

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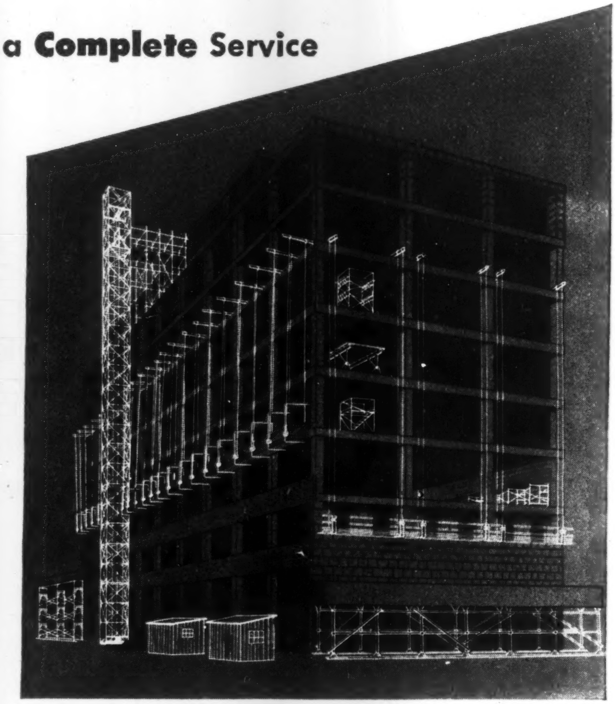

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Aid or Trade?

A CRISIS AHEAD

A crisis in the foreign trade relations of the United States is in the offing. It is a crisis caused by:

1. Efforts of producers in friendly nations to earn more dollars by increasing exports to the United States, and
2. Efforts of industries in the United States which would be hurt by competition from these imports to keep them out.

This crisis is a threat to the effectiveness of American leadership in the crucial effort to build the nations of the free world into a strong and unified group. It is the purpose of this editorial to advocate a constructive approach to the difficult situation that is developing.

Background of the Crisis

Most countries in the free world—with American aid—have managed to push their outputs well above prewar levels. As they have done so, they have been urged by our highest government officials to increase their exports to us. Sales in our market enable these countries to earn dollars which they use in turn to buy the products of America's farms and factories. Thus, as they become self-supporting, the need of American aid is reduced.

But as these efforts to export more to the United States have promised increasing success, competitive American producers have become increasingly alarmed about what that success might do to them. Consequently, they are seeking more protection—by appeals to the U. S. Tariff Commission to recommend higher import duties and by appeals to Congress for new laws to discourage imports.

Our Friends Protest

A year ago Congress answered one of these appeals by imposing a quota on imports of dairy products. Now, among many other legislative proposals being strenuously pressed is a move to extend the scope of "Buy American" legislation. A year ago the U. S. Tariff Commission had only four petitions for increased import duties on its docket. Since then fourteen more petitions have been filed and others are definitely on the way.

Faced by these mounting efforts to block the sale of their products in the American market, no less than eleven friendly nations, including Great Britain, France, Italy, Canada, the Netherlands, Switzerland and Denmark, have filed protests with our State Department. Through many of the protests runs one refrain. Although stated in diplomatic language, it might be correctly paraphrased to say: *"In* *sending us aid you have made it very clear that you want us to get on a self-supporting basis at the earliest possible moment. But, when we begin to make headway in that direction by trying to sell you more of the things we are equipped to produce, you start closing your market to us."* The threat of European resentment against the United States being stirred up by this argument is obviously great.

At the same time there exist grounds for special resentment in the United States against certain prospective imports of European manufactured goods – those of machine tools, for example. In part these will be produced with machinery that has been sent to Europe as part of our economic aid program. With absolutely no diplomatic language involved, the argument, which will be extended much farther than the facts would justify, will run: "*We gave those people the equipment that they now use to cut our throats!*" This line of argument will find response among workers as well as employers in industries faced by more competition from imports. Labor, too, is keen for protection against more foreign competition.

Aid or Trade?

As between continuing direct economic aid to Europe or accepting the imports that would make those countries self-supporting, some would prefer to continue the aid program. They argue that the tax machinery of the federal government can spread the burden of aid broadly, while we have no comparable machinery that can cushion the shock to individual industries, firms and communities that may result from stepped-up imports of competitive products.

As we see it, this position is untenable. It would make rubbish of our Atlantic Charter promise ". . . to further the enjoyment by all States, great or small, victor or vanquished, of access, on equal terms, to the trade and to the raw materials of the world which are needed for their economic prosperity." It would be an admission that, for all our profession of faith in competition and our opposition to European cartels, we really don't believe in competition.

U. S. Self-Interest

The people of this country have invested billions of dollars and seven years of hard work in the attempt to put our allies on a self-supporting basis. If we keep their goods out by raising trade barriers, we are directly defeating our own purposes.

Also, in moving to protect some groups of American producers we should be hurting others. For many American producers the export market, which this year will take about $14 billion of civilian goods, spells the difference between operating at capacity and closing down 25% of their facilities. When we discourage imports we cut off dollar earnings by other nations which are spent here to keep some of our factories and farms going.

At the same time, it must be recognized that certain American industries and their capacity to maintain employment will be hurt by increased imports. Hence it becomes critically important for the United States to formulate a national program designed to help these industries and communities take up the shock.

There is no neat and simple prescription by which this can be done, but several possibilities have been suggested. One on which there is general agreement is that tariff reductions should be gradual. To cushion their impact, the government might well give preference on defense orders to industries and areas adversely affected by an increased volume of imports. Direct assistance to workers and companies in shifting to different lines of business may be worth consideration.

These are by no means all the possibilities. They may not even be the best. But they do serve to suggest the necessity for flexibility and imagination in dealing with the growing crisis in trade relations. *Our ingenuity in developing new ideas to meet this crisis may well be a decisive factor in our effort to weld the free nations into a strong and durable alliance.*

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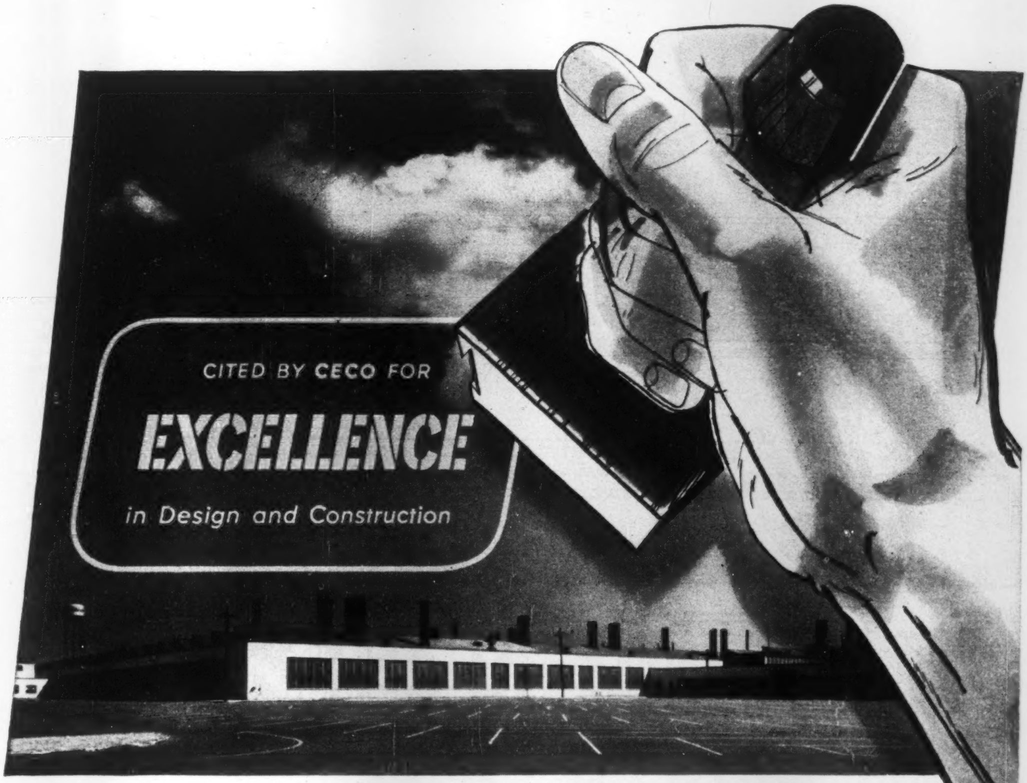

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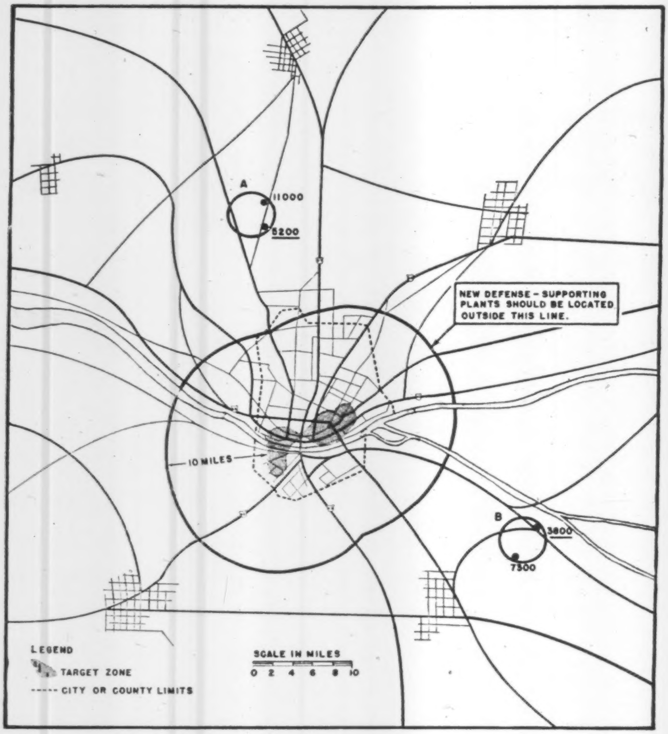
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POTENTIAL A-BOMB TARGET zone is overlaid on an over-all map of the entire metropolitan area. New industrial plants should be outside the 10-mi zone.

Dispersal planned as A-bomb defense

Early this month in Columbus, Ohio, an English-born architect and "blitz" veteran visited three bomb shelters designated by the civil defense. Afterward his first comment on their adequacy was, "Old man, I think I'd stay in the streets."

Here are some of Nick Stahl's comments on the shelters:

On one with a brick ceiling—"The bricks can come loose, you know, and they can be worse than bombs."

On another with a cracked brick partition as its wall—"Oh, no!"

His final comment was, "In a real conflict, you'd have surface shelters all over the place. Parking lots, parks, everywhere. Try to disperse people into a lot of little ones, thus lessening the danger from any one hit.

"Dispersion, that's the word. I'd disperse myself into the country and dig a hole!"

In whole-hearted agreement with young Mr. Stahl is the U. S. Department of Commerce which recently issued a series of instructions on the dispersal of new defense supporting plants.

Wistfully recognizing that it would be impractical to "go into the country, and dig a hole," the new series of instructions entitled "Industrial Dispersion Guidebook for Communities" is intended to show municipalities how to make their area less attractive to atom-bomb attack.

• **The standard**—As announced in August, 1951, the National Industrial Dispersion Program provided that new defense supporting production facilities be located 10 or more miles from highly industrialized or densely populated sections or military installations.

Proper location of plants in accordance with these criteria is one of the conditions imposed on industries before they may receive government defense production assistance in the form of accelerated tax amortization privileges and defense loans.

The basic action by any community in setting up a dispersion program is to form a task force or committee whose function is to conduct a survey to identify population and industry concentrations.

As of this spring 57 cities have formed task forces; nine cities soon will form a force; two cities have not yet decided.

• **How to make a survey**—The first step is to make up a list of defense-supporting manufacturing plants which employ 100 or more on all shifts.

Then get the latest census data of the "densely populated sections."

Now on an overlay on a map of at least 1 in. to 1 mi. plot the plants showing the employment figures rounded to the nearest hundred. (It should be noted that the employment figure of eight critical classifications of industries is weighted by 1.5 in making the total.)

Also plot the center of gravity of densely populated areas and encompass them in four-mile dia circles having 200,000 people or more.

Overall circles of four-mile dia are laid out to encompass employment rolls of approximately 16,000 or more. Connect the centers of such circles.

Connect the gravitational centers of population with a heavy line.

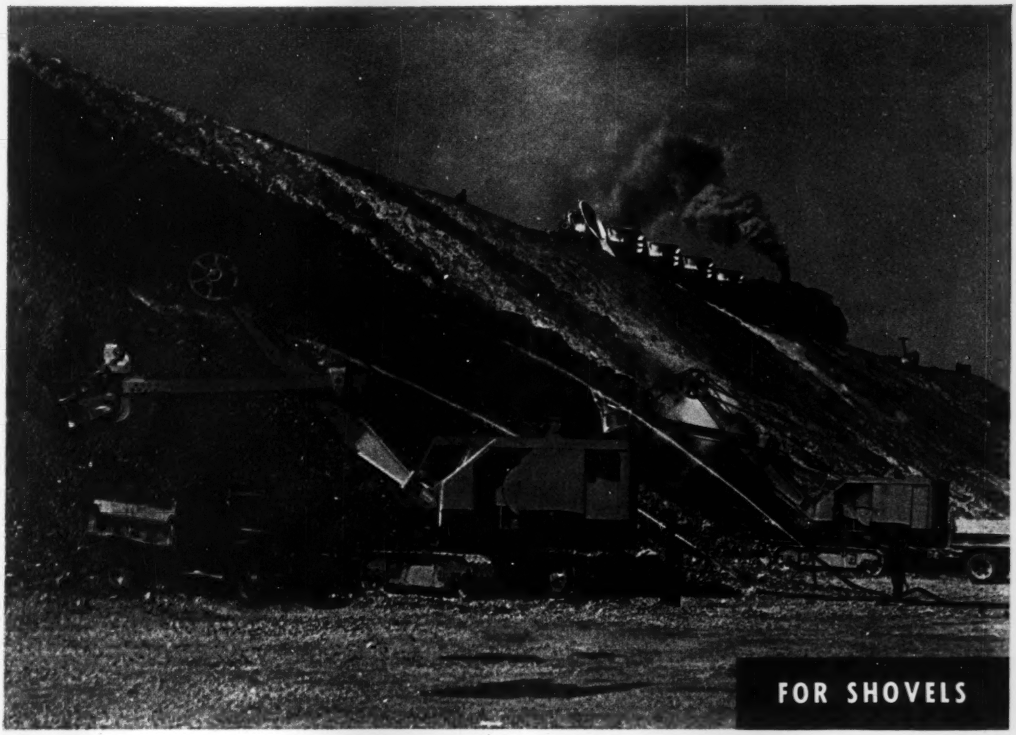
The boundaries so drawn indicate the attractive target areas. At a distance of not less than 10 miles from the boundaries just drawn, draw another boundary to indicate the area within which new plants should not be located. The master map also will indicate the location of major transportation and utility lines.

• **Using the map**—The guidebook cautions that for security reasons the map should be disseminated only to persons having a legitimate use for it.

A manufacturer in making application for Certificate of Necessity (accelerated tax amortization), can secure faster consideration of the dispersal phase if he attaches a statement from the local dispersion committee.

Such a statement would give the facts concerning the dispersal value of the selected site and might well include a copy of the dispersion survey-map with the prospective site checked.

(*Municipal continued on p. 51*)



THIS IS THE DIESEL

for any job from 32 H.P. up

Once Diesel power was only for big jobs, but now—with the General Motors Diesel—you can have the efficiency and economy of Diesel power on *any* job from 32 horsepower up.

For GM Diesel's 2-cycle design (power at every piston downstroke) means more power from a smaller engine—smoother, quicker-acting, high-compression power that *gets more work done faster—and uses fewer gallons of lower-cost fuel.*

Clean, simple design makes maintenance easy and less expensive. Also, most moving parts are the same for all GM Series 71 engines—2 to 24 cylinders—resulting in lower parts inventory and greater parts availability.

Write us for the list of 150 manufacturers who now offer GM Diesel power in more than 750 models of equipment. Ask your nearest GM Diesel distributor to show you the savings this versatile Diesel can make on your job.

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Single Engines . . . 32 to 275 H.P. Multiple Units . . . Up to 800 H.P.

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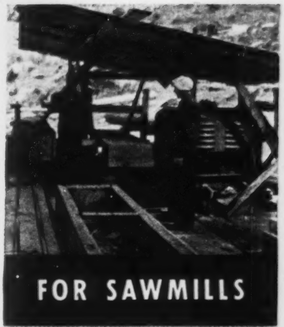
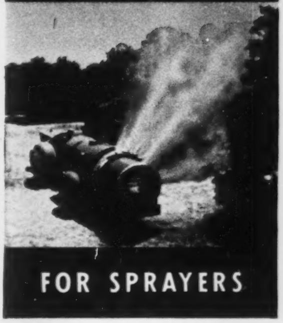




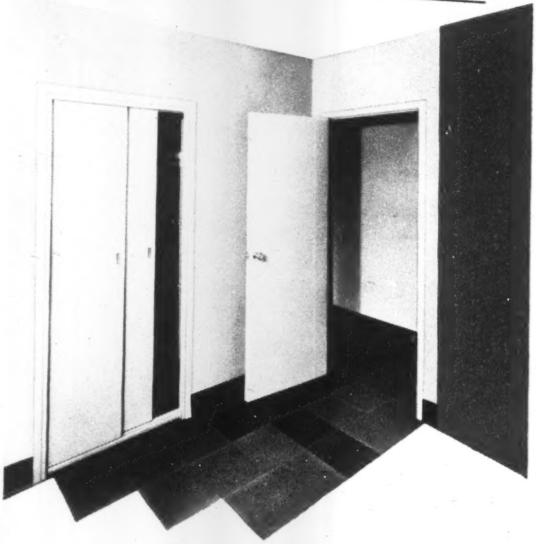
Hal A. Miller of the office
of Hal A. Miller, A. I. A.,
says:

"For the Marylander Apartments, we selected Truscon Double-Hung Steel Windows and Residential Steel Doors because they assured architectural beauty and structural strength."

In this spacious new Baltimore apartment building, Truscon Series 138 Double-Hung Steel Windows lend flowing architectural lines and provide adequate sunlighting, with easily controlled ventilation.

An impression of extra spaciousness in room area, and sweeping views of the landscape, are achieved by well-selected, well-known window combinations and placements.

Long-term economy of maintenance is assured by these Truscon Windows. Because they are steel, they will not sag, warp, or rot. Their snug fit and built-in stainless steel weatherstripping help cut fuel costs, too.



Marylander Apartments, Baltimore, Md.
Hal A. Miller & Associates, Architects
John H. Hampshire, Inc., Plastering Contractors
Baltimore Contracting, Inc., General Contractors.

Truscon Residential Swing and Slide Steel Doors furnish sharply modern notes; save space; and assure trouble-free, easily operated door service at all times. These doors are competitively priced with doors of any other material, and at the same time offer important installation economies and conveniences.

See SWEET'S for complete specifications on Truscon Series 138 Double-Hung Steel Windows and Truscon Residential Interior Steel Doors. Write for illustrated literature on the complete line of Truscon Steel Building Products.

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TRUSCON
MARK OF MERIT
PRODUCTS

TRUSCON a name you can build on

RAY CAVENDISH, former West Virginia State Road Commissioner, announced Charleston plan.

Charleston fights jam with $46 million plan

West Virginia's State Road Commission is coming to the aid of traffic-clogged Charleston, the state's capital city, with a $46 million thoroughfare plan. Among other improvements the plan includes a new east-west expressway through the heart of the city.

The projects, announced by former State Road Commissioner Ray Cavendish, following an extensive survey by Howard, Needles, Tammen and Bergendoff of Kansas City, Mo., provide for new utilization of some existing streets and calls for drastic changes in the city's present travel habits.

The four-lane expressway is the biggest single item on the program, compiled after a two-year study. This expressway, starting at the western edge of the city, would join the present four-lane Kanawha Boulevard at the eastern end of Charleston and would handle most of the traffic of four principal routes; U. S. 60, U. S. 119, U. S. 21, and State Route 14, and would relieve congestion on narrow Washington Street which now handles all truck traffic of those four routes. Kanawha Boulevard, which skirts Kanawha River through the city, is reserved for passenger cars only.

Along with the expressway, cloverleaf interchanges would facilitate the movement of heavy traffic entering or leaving by way of U.S. Route 60 which crosses the Kanawha River at the western edge of the city. The northern terminus of this bridge,

(*Municipal continued on page 53*)

from any point of view

you'll do better with ARKWRIGHT

You'll find it easy to do better work with Arkwright Tracing Cloth—and here are three specific reasons why:

1 You can re-ink razor-sharp lines over any erasure without "feathering" or "blobbing".

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ROCK RATED!

FOR ROCK BOTTOM COSTS

P&H MAGNETORQUE*

puts an end to the old swing frictions

We'll make this promise: You'll never have to "baby" this machine, even in the heaviest going! It's *built* for it — all-welded of alloy steels throughout, the toughest construction known. *It means steady digging.*

But the big pay-off in extra production comes with Magnetorque electric swing — enough faster to deliver 5 cycles to 4 on other machines in the 2½ yd. class. And the "time-outs" for adjustment and replacement of swing friction linings can now be salvaged for increased yardage. Magnetorque lasts the life of the machine.

*T.M. of Harnischfeger Corporation for electro-magnetic type clutch.

HARNISCHFEGER
CORPORATION
4404 W. National Avenue • Milwaukee 14, Wis.

Ask today for facts about the 955-A. Also the Model 1055 — its companion machine with 3½ yd. capacity.

POWER SHOVELS • CRAWLER AND TRUCK CRANES • OVERHEAD CRANES • HOISTS • ARC WELDERS AND ELECTRODES • SOIL STABILIZERS • DIESEL ENGINES • PRE-FABRICATED HOMES which connects with Kanawha Boulevard, has long been a bottleneck.

• Immediate action—However, the expressway is projected for the future while plans call for an early start on $5 million of street improvements as part of the state's overall $46 million program. Widening of busy Washington Street and extension of some other streets to make east-west throughways are to be started first.

Insuring an early start on at least the initial phase of the street program was Cavendish's announcement that bids had been received by the road commission for the Washington Street widening. Low bidder was the Charleston Construction Co.

Charleston is a funnel for traffic of all sorts, and a point about three miles east of the city's corporation line will be the northern terminus of West Virginia's proposed $96 million turnpike which will extend 88 mi south to Princeton, W. Va. The toll road naturally will bring additional traffic.

• Headache—To everyone's amazement, three surveys of vehicular movement in the past 10 years indicated that the city's biggest headache is not "through" traffic. Sixty-three percent of traffic moving in the city on an average day moves little more than a mile. The average length of travel—an almost unbelievable fact—is between 6 and 10 blocks.

A traffic expert had this to say of Charleston's travel habits:

"These trips in Charleston's local zones are twice as many as taken by residents in U. S. cities of comparable size."

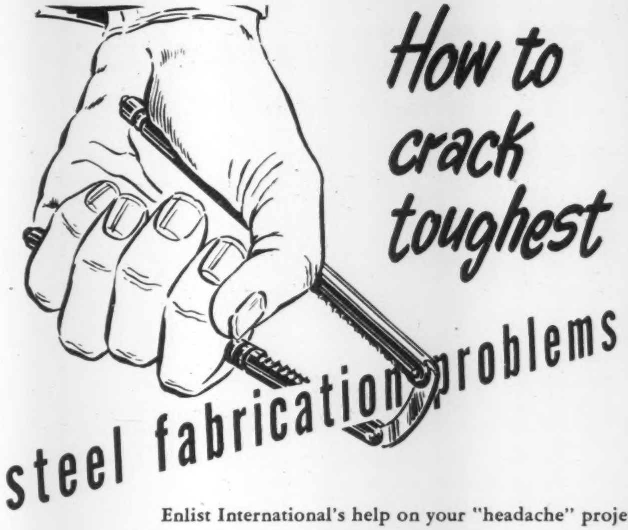
"Through" traffic—which neither begins nor remains within the city's limits—is only 4% of the daily trips in the city. People coming into Charleston and those who travel daily within its borders account for 96% of all traffic on an average day. This adds up to a staggering total of almost 300,000 different vehicle trips every 24 hours.

All of these vehicles must be jammed into a narrow valley less than a mile wide and flanked by sharply rising hills.

Traffic studies show that a by-pass highway is neither sound nor feasible: People are not traveling away from Charleston; they want to get inside the city.

• Charleston—Charleston is the principal distribution center of goods and services for some 650,000 persons in 18 counties. Its wholesale center is

(*Municipal continued on page 54*)



Enlist International's help on your "headache" project.

Business and industrial leaders . . . builders, contractors and architects . . . national, state and local governments . . . all have long found International Steel a fertile source of sound ideas—and facilities for successfully handling difficult steel fabrication projects.

In "cracking" your tough problems, you'll find we take closest schedules . . . most exacting specifications . . . well in stride. Write the Special Projects Director at International Steel, outlining your problem. You'll get immediate action.

The Kentucky State Office Building, Frankfort, Kentucky—an outstanding interpretation of modern, functional design—and a recent example of an unusual problem of steel fabrication handled by International.

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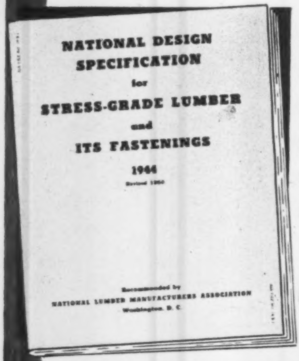
TIMBER FOR COMMERCIAL BUILDINGS

Chrysler
PALMER
Plymouth
CHRYSLER
PALMER
PLYMOUTH

Sales and service station using 66′ bowstring trusses with Teco connectors. Designed and fabricated by Cartwright and Morrison, Inc., Holcomb, N. Y.

In thousands of buildings today, such as shown above, sturdy timber construction is doing its usual peace time job and at the same time there is plenty of timber available for defense construction.

More and more engineers and architects are designing in timber.


NATIONAL DESIGN
SPECIFICATION
for
STRESS-GRADE LUMBER
and
ITS FASTENINGS
1944
Revised 1950

Recommended by
NATIONAL LUMBER MANUFACTURERS ASSOCIATION
Washington, D. C.

And to aid the construction industry, timber fabricators in all sections of the country are supplying prefabricated ready-to-erect timber roof trusses and framing members.

Specify timber—there's plenty of it for early delivery.

TIMBER ENGINEERING COMPANY, 1319 18th St., N.W., Washington 6, D. C.

Please send me FREE copy of "National Design Specification for Stress-Grade Lumber and Its Fastenings" as recommended by the National Lumber Manufacturers Association.

We plan to build a________________

NAME________________

COMPANY________________

STREET__________CITY__________STATE______

ENR

the largest between Roanoke, Va., and Cincinnati, Ohio.

Here then is the situation Charleston finds itself in today:

- Principal streets and most bridges are exceeding their potential traffic capacity.
- Kanawha Boulevard, in the vicinity of the central business area cuts travel speed from 40-mi maximum to less than 15 mph.
- Two important bridges are limited by inadequate approaches and neither is carrying its full potential of traffic.
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- There is no expressway to siphen traffic to commercial sections and reduce the load of "local" thoroughfares.
- Enforcement of traffic laws is inadequate.
- Irregular width of some important thoroughfares set up "bottlenecks" that slow traffic to unbelievable slow speeds.
- The movement of traffic on cross streets is curtailed because of "dead-end" construction on many principal cross streets.
- Insufficient river crossings place heavier than usual traffic loads on a few streets unable to bear them.

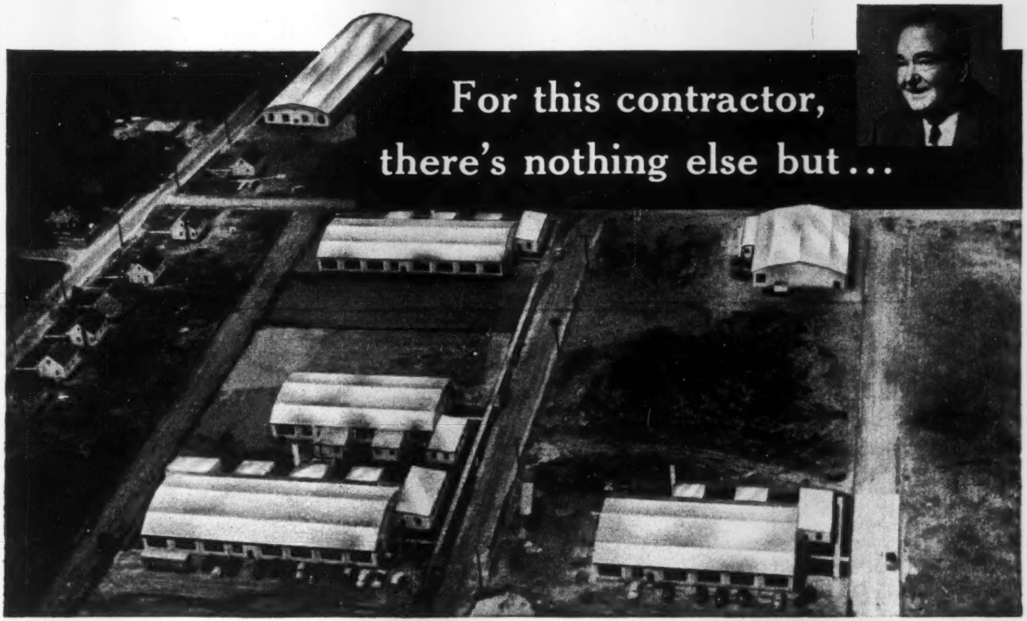
Theodore J. Cambern of Howard, Needles, Tammen and Bergendoff says this about traffic control:

"The cheapest effective measure for immediate relief of traffic congestion in the central area of Charleston would be prohibition during peak hours of vehicle parking on 'through' streets."

Charleston's Mayor John T. Copenhaver has promised the city's cooperation if the state moves forward with its program to lighten the traffic burden.

The city's recently organized Community Slum Clearance and Redevelopment Authority may get a chance to help the city out of its traffic difficulties.

Under federal acts that brought it into being, the five-man commission could declare property along proposed street rights-of-way unsatisfactory for present purposes. Through federal grants, the commission could clear the land and sell the property to the state for street construction at a satisfactory price to both sides.



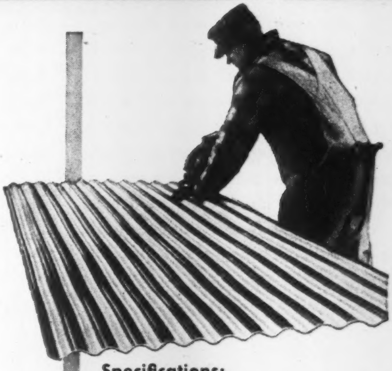
For this contractor, there's nothing else but...

George Mole has been a contractor and industrial building owner in the Amityville, Long Island, area for 25 years. He discovered Reynolds *Lifetime* Aluminum Industrial Corrugated in 1949. He put his first 15,000 square feet on the Amityville School...then used it on the Copiague and Lindenhurst schools and on 13 other industrial and commercial buildings. Let him tell you why:

"First of all economy. Initial cost is low. The insulation value means still more economy, as well as more comfort inside. Low maintenance and long life extend economy through the years. And lighter weight (56 pounds per square) can save on construction.

"My Reynolds .032 roofs have set a standard in this area that I am proud of. I have more buildings planned, and if I can't get this roofing I won't build—that's how sold on Aluminum I am."

Call Reynolds for literature and technical assistance... offices in principal cities. Check your classified phone book for our listing under "Building Materials" or write to Reynolds Metals Company, Building Products Division, 2009 South Ninth Street, Louisville, Kentucky.



Specifications:

Thickness .032"
Corrugations 7/8" deep, 2-2/3" crown to crown
Uniform load support (roof) 80 p.s.f. on 4' purlin spacing
Roofing width 35", coverage 32"
Lengths 5', 6', 7', 8', 9', 10', 11', 12'

Military demands for aluminum reduce supply, but Reynolds is rapidly expanding aluminum capacity. Rated orders receive priority handling.

REYNOLDS *Lifetime* ALUMINUM INDUSTRIAL CORRUGATED

"The Kate Smith Evening Hour" on Television, Wednesdays—Tallulah Bankhead in "The Big Show" on Radio, Sundays—NBC NETWORKS

TIMBER FOR COMMERCIAL BUILDINGS

Chrysler
PALMER
Plymouth
CHRYSLER
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PLYMOUTH

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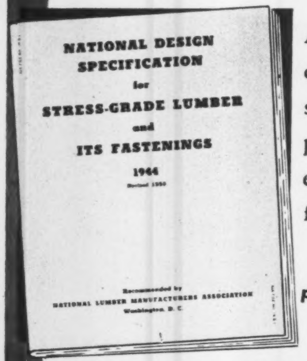

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ENR

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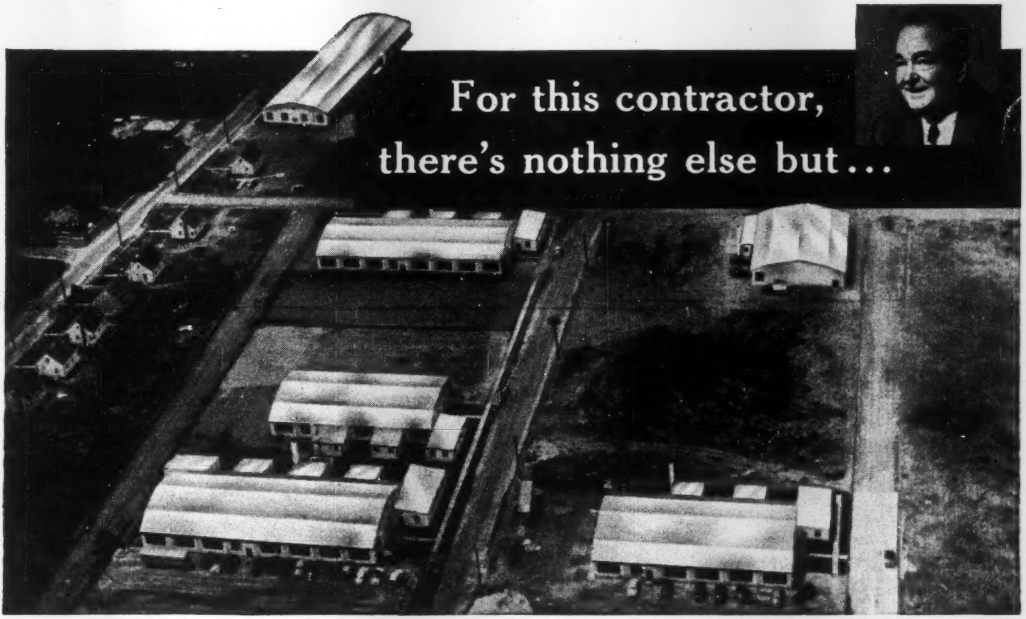

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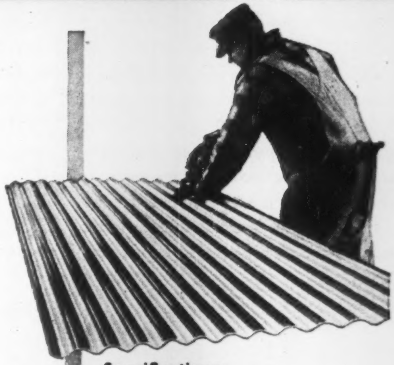

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"First of all economy. Initial cost is low. The insulation value means still more economy, as well as more comfort inside. Low maintenance and long life extend economy through the years. And lighter weight (56 pounds per square) can save on construction.

"My Reynolds .032 roofs have set a standard in this area that I am proud of. I have more buildings planned, and if I can't get this roofing I won't build – that's how sold on Aluminum I am."

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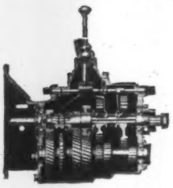

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"Fuller Firsts" reflect this front-running teamwork . . . Fuller first to perfect a trouble-free transmission for high speed diesels; first to offer a line of auxiliaries so complete that *any* requirement could be met; first to harness up to 400 hp. in a single unit transmission; first with the revolutionary ROAD RANGER® with all ten speeds shifted by *one* lever—and no gear splitting.

Get the right gear to move *your* part of the world; the Fuller line is described in the *New* Condensed Specification Folder. Ask for it.

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Unit Drop Forge Division, Milwaukee 1, Wis. • WESTERN DISTRICT OFFICE (SALES & SERVICE—BOTH DIVISIONS), 1060 E. 11th Street, Oakland 6, Calif.

CLARENCE EARL BLEE, chief engineer of TVA, is responsible for planning, design and construction of the vast network of power plants. (Photo by Colquitt)

More steam plants for TVA goals set by chief engineer

Tennessee Valley Authority plans its greatest power expansion to date during the next three and one-half years, its capacity scheduled to jump from 4 million kw at present to 8 million kw. Clarence Earl Blee, the authority's chief engineer, told ENGINEERING NEWS-RECORD.

This doubling of capacity, Blee disclosed, does not include a $150 million expansion to provide power for new Atomic Energy Commission facilities at Oak Ridge and Paducah. The $150 million is the first-year cost of the program which, when completed, will add another 1.7 million kw capacity, and cost $278 million.

Blee's more than 40 years as an engineer have been divided between private and public power developments. He has been the authority's chief engineer since 1943. Prior to that, he served TVA eight years as project manager, successively, on Hiwassee Dam, N. C.; Fort Loudoun Dam, Tenn.; and Fontana Dam, N. C.

A keen, wiry man with a ready smile and a habit of choosing his words carefully, Blee becomes restless at times in the confines of his office in the Union Building at Knoxville. "My chief relaxation," he said, with a twinkle in his eye, "is to get out on one of the jobs and see things actually being done."

•Before TVA—Before his TVA career, Blee had acquired a reservoir of experience in power development and water supply. Immediately after graduation from California's Stanford University, in 1911, he became an engineer on power development and water supply in British Columbia.

He then had charge of the water supply for the Panama-Pacific International Exposition in San Francisco, 1914-16.

For the next seven years he was employed by The California-Oregon Power Company, except for a year's stint as Assistant Professor of Civil Engineering at Stanford. The first part of this period was spent as assistant engineer on dam and power plant construction and later as assistant to the chief engineer on power system design and operation.

In 1923, in connection with the formation of a construction department by the British Columbia Electric Railway Co., Ltd., he was principal assistant engineer with that firm, supervising the design and construction of dams, tunnels, power plants and transmission lines.

After a period of 12 years in British Columbia, Blee decided to return to the United States and in 1935 began his TVA career. He became chief engineer when the late Theodore B. Parker resigned to become head of the Civil Engineering Department of Massachusetts Institute of Technology.

Blee last year attended the Fourth World Congress on Large Dams in New Delhi, India, where he presented a paper on rock fill dams.

He concurrently attended the World Power Conference, and the International Association for Hydraulic Research at Bombay.

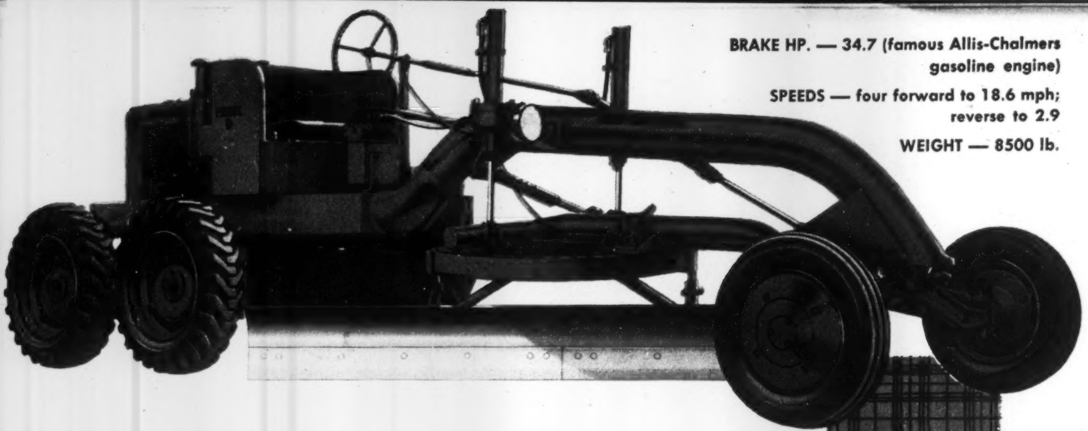
• Program—Blee outlined TVA's planned expansion program for ENR. The TVA construction budget for the fiscal year 1952, just completed, totaled approximately $259 million. The regular 1953 construction budget total is $207 million, which does not include the emergency program to furnish power for AEC expansion. Adding that cost of $150 million, the 1953 budget rises to approximately $357 million.

The capacity of the system on June 30, 1951, was 3.2 million kw, of which some 15% was produced by steam plants and the remainder by hydro units. By the end of fiscal year 1952, 800,000 kw had been added, pushing the present capacity to 4 million kw. By the end of the calendar year 1955, the capacity will reach 8 million kw, not including 1.7 million kw.

With a total power service area of 80,000 sq. mi., TVA has a total of 29 dams in its system. Eighteen dams were built by the authority itself, six were acquired, and five are owned by the Aluminum Company of America with water release directed by TVA.

Five steam plants are now under construction, Blee related. The Congress, which recently adjourned, approved expenditures for a total of 16

(*Men & Jobs continued on page 60*)



BRAKE HP. — 34.7 (famous Allis-Chalmers gasoline engine)

SPEEDS — four forward to 18.6 mph; reverse to 2.9

WEIGHT — 8500 lb.

only the *Allis-Chalmers* model D

Does so many jobs at

Low first cost • Tandem drive • plus matched attachments

Here's a grader with power and capacity to do an outstanding job the year 'round on both construction and maintenance . . . yet it costs only one-third as much as large graders. The most important reason for this unequalled performance is sure-footed TANDEM DRIVE. This big grader feature provides better traction, easier riding, smoother blading under *all* conditions . . . and it's *exclusive* with the Model D in this class.

What's more, with easily mounted, hydraulically controlled rear-end loader, scarifier, snowplow and windrow eliminator, there's almost no limit to the jobs it can handle with real savings. See your Allis-Chalmers dealer now and let him give you a working demonstration.

the newest, finest line on Earth!

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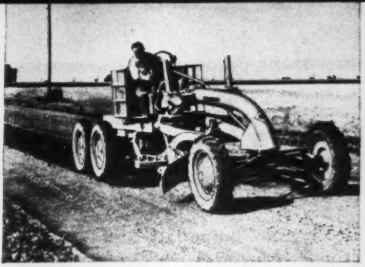


Scarifies Toughest Surfaces

Slopes Banks

Cuts and Cleans Ditches

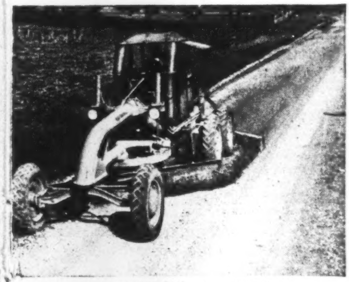
Strips Sod, Handles Terracing

Finishes Between Forms,
Levels Sub-divisions

so little cost

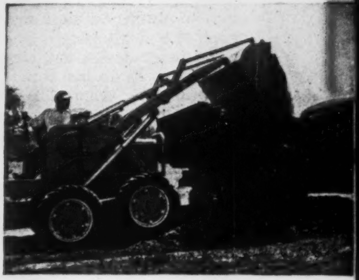
make it the biggest value of them ALL!

Grades Shoulders



Maintains Without Leaving Windrows

Works and Spreads Oil Mix



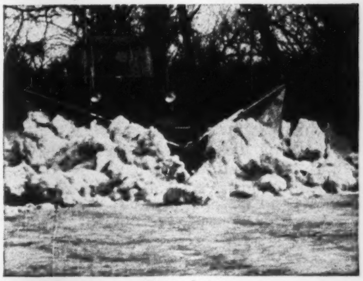
Loads Surplus Dirt
or From Stockpiles

designed for your jobs!

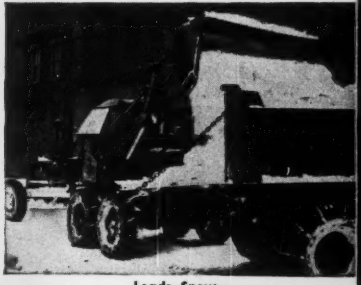
built to take it!

easy to operate!

easy to service!



Plows Snow



Loads Snow

"I inherited a strong organization . . ."

Steam to hydro: 50-50 by '56 is the aim

units, ten in the supplemental bill and six in the regular appropriations measure.

• **Why Steam**—Blee explained TVA's decision to utilize steam plants as power producers on a large scale. "We turned to steam to supplement the hydro system because of the growing demand for power," he said. "Sufficient remaining water power is just not available to meet the extraordinary demands imposed by defense industries.

"The Hydro plants we now have under construction have a maximum capacity of about 75,000 kw. It would require more than ten such plants (without steam) to meet the load increase of a single year."

The heavy design and construction program stacks up like this:

- Johnsonville steam plant on Kentucky Dam Reservoir—four units in operation and two under construction, all with capability of 125,000 kw each.
- Widow's Creek steam plant on Guntersville Reservoir—one unit in operation, five under construction, each with a capability of 125,000 kw.
- Shawnee Steam Plant on the Ohio River near the mouth of the Tennessee River—four units under construction and two others provided for in the 1953 budget, all with a capability of 150,000 kw each.
- Kingston steam plant on Watts Bar Reservoir—four units under construction, each with 150,000 kw capability, and two 200,000 kw units set up in 1953 budget.
- Colbert steam plant on Pickwick Reservoir—two units under construction and two set up in current budget, all with 200,000 kilowatt capacity each.

At the same time hydro-electric installations are being carried out at seven different locations, including the construction of two new dams. These are Boone Dam and Fort Patrick Henry Dam in the eastern part of Tennessee. Other installations are to be additional units at plants already built. A total of 400,000 kw is involved in this phase of the expansion program showing, Blee pointed out, that hydro-electric construction is still an important factor in the TVA system.

The supplemental appropriations bill passed by the last Congress will provide for the following emergency construction to supply power for the proposed AEC expansion at Oak Ridge and to contribute to the supply at Paducah:

Shawnee—four units, capability of 150,000 kw each.

Kingston—two units, capability of 200,000 kw each.

Rogersville—two units, capability of 200,000 kw each.

Gallatin—two units, capability of 250,000 kw each.

The Rogersville and Gallatin projects are at two new sites, both in Tennessee. These plants, Blee explained, were so situated so that they would obtain fuel from coal fields not now contributing to the TVA system.

• **Busy day**—Turning to the chief engineer's busy routine. His day begins at 8 a. m. After looking over his mail, he disposes of correspondence. Usually there are several scheduled meetings throughout the day with members of his department and representatives of other divisions of TVA.

"In addition to a regularly scheduled staff conference each Monday morning, I have a good many informal discussions," Blee said, "with George Leonard, the chief construction engineer; Bob Monroe, the chief design engineer; Jim Bowman, the chief planning engineer; and Harry Wiersema, assistant to the chief engineer."

The lunch hour is usually an occasion for meeting informally with various members of the authority. About once a week, the board of directors of the TVA convenes and Blee attends these sessions.

• **Organization**—The Office of the Chief Engineer is responsible for the planning, design and construction of all power production facilities, both hydro and steam; of all navigation and flood control works; and also for the direction of water control operations assigned to the office.

The organization, under the chief engineer, is divided into three divisions—planning, design and construction. At present, the planning division has about 480 employes; design, 650; and construction 9,000, of whom 8,000 are hourly trades and labor workmen.

The TVA organization, from the Board of Directors down, follows a pattern of decentralization, Blee explained. The chief engineer carries out this principle by passing on to his division heads the responsibilty for carrying out work in their lines and they, in turn, look to their branch heads for results. In the Construction Division each major project has a project manager, located directly on the job.

Blee is popular and well liked by his associates. "He has our confidence," said one engineer. "When he gives us a job to do, he doesn't stand behind our backs and dot the i's or cross the t's. He puts the responsibility on our shoulders. And he never engages in public reprimands or anything of that nature."

• **Growth**—Blee envisions the continued growth of TVA: "As the sole supplier of power to an area of 80,000 sq mi," he said, "TVA must necessarily continue to grow. By the end of 1955, the demand in this area will be approximately 7 million kw exclusive of the power supplied AEC.

"If this load continues to have a growth of only as much as 5% for example—and the load is now increasing at a rate close to 10%—it would require large units of new power to keep up with the load demand.

"TVA is a big producer of electric power, but it's more than that; first, and primarily its purposes are to promote navigation and flood control. At the same time a less spectacular but important program is being carried on. This includes the development of the resources within the valley—improved land use, forestry, research and experimentation in better and cheaper fertilizers; and the wiping out of malaria."

He was asked: "What future has an engineer in TVA?"

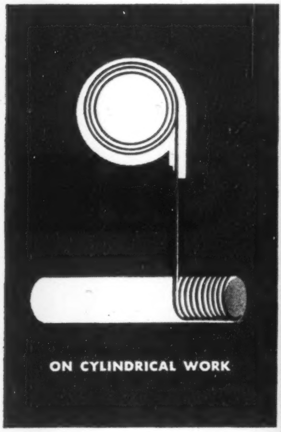
He replied: "From the engineering standpoint, TVA offers a continuing program of interesting work, both in the field of hydro and steam and flood control and navigational development.

He went on to say that "TVA is an

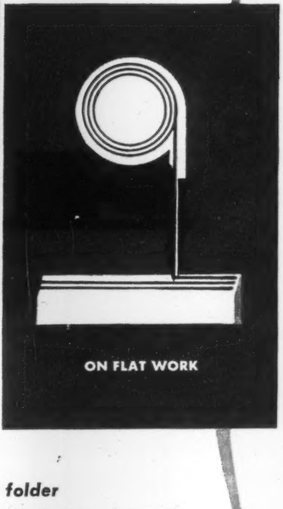
(*Men & Jobs continued on page 62*)

For automatic welding...

STOODY 104



ON CYLINDRICAL WORK



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Stoody 104 bonds readily to all weldable SAE and AISI steels, forms an ideal underlay for hardfacing alloys. Deposits are readily machinable and respond to heat treatment.

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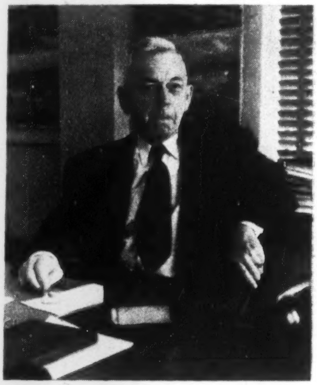
MEN & JOBS



"TVA offers an interesting future . . ."

excellent place for young engineers to begin their careers. They have an opportunity to gain experience in different lines of engineering and of taking on added responsibilities as they advance. Not only do we have an excellent organization in which to work but men who leave it almost invariably advance into higher jobs."

The rapid growth of TVA, he explained, has put a heavy load on the design and construction organization. "Steam plants require detailed design, each requiring more than 2,000 working drawings," he said.

The chief engineer discussed the rapid development of steam plants as producers of electricity. He recallled that when the turbogenerators were ordered for the Johnsonville plant early in 1949, specifications called for a capability of 125,000 kw per unit with 1,800 rpm, the largest single-shaft units of that type available at that time.

"Today, only about three years later," he revealed, "we are proposing single-shaft units with a capability of 250,000 kw each and with a speed of 3,600 rpm."

Blee modest about his ability as an organizer. "I inherited a particularly strong engineering and construction organization when I became chief engineer," he said. "The earlier administrators in TVA deserve a great deal of credit for their foresight in building up such an organization."

He praised the TVA construction division as "an organization equal to any in the country, with top supervisors, including project managers, superintendents, construction engineers, and general foremen who have been with the authority from 15 to 18 years."

(*Men & Jobs continued on page 66*)

Standard 6" x 6"
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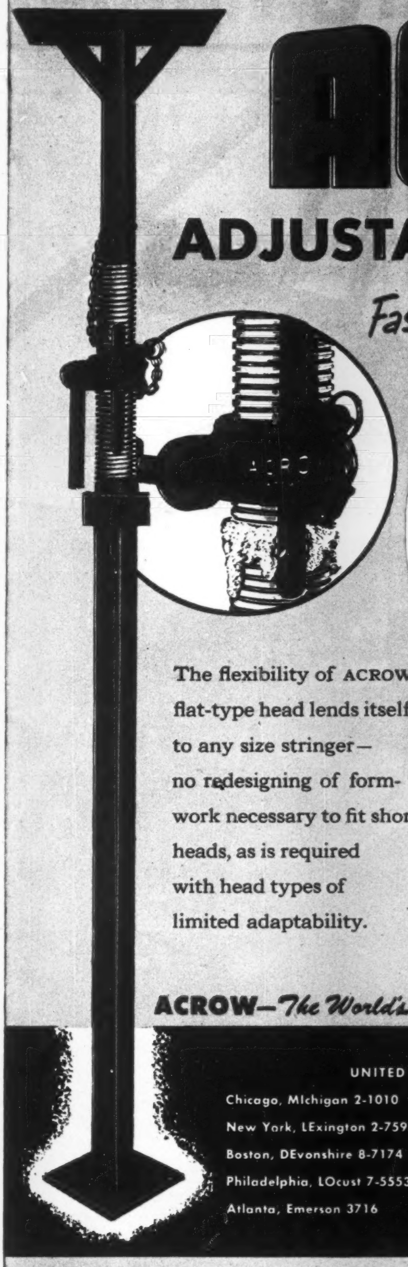

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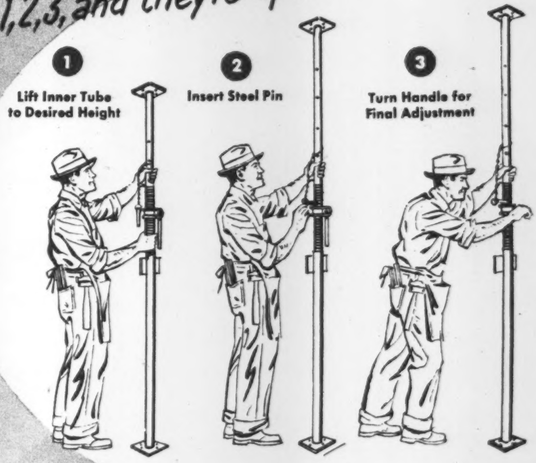
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Lift Inner Tube to Desired Height
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3
Turn Handle for Final Adjustment

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Why cast iron pipe

CAST IRON
WEIMER PURSELL

can and does save

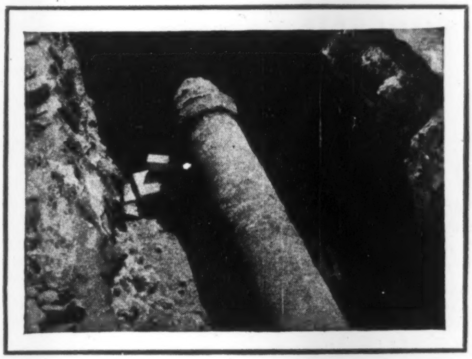
Millions of Tax Dollars

The answer, of course, is (1) cast iron pipe serves for centuries, and (2) over 95% of the pipe in service in America's water distribution systems is cast iron pipe. But let's get down to figures.

The cumulative cost of our water supply systems, from 1817 to 1951, is estimated at $6-billion, of which more than $3.5-billion is for cast iron pipe, including installation costs. The balance is for pumping stations, filter plants, storage facilities, etc.

Most of this money was raised by the issuance of bonds. Now, the useful life of cast iron pipe is at least 4 to 5 times the average term of a water revenue bond issue. Records prove that more than 35 American cities have cast iron mains in service that were installed over 100 years ago. A survey sponsored by three waterworks associations shows that 96% of all six-inch and larger cast iron pipe *ever laid* in 25 representative cities is still in service.

Add it all up and the answer is clear that, by serving for generations after bonds issued to pay for them have been retired and forgotten, cast iron mains save many millions of tax dollars.



One of a number of cast iron water mains which have been in service in New York City for more than a century. Over 35 other cities have century-old cast iron mains in service.

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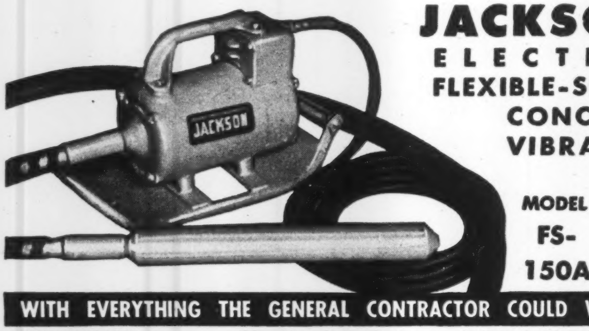

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WITH EVERYTHING THE GENERAL CONTRACTOR COULD WANT

POWER GALORE: 2½ HP (continuous duty rating) Universal Motor provides more than ample power for uninterrupted placing of the stiffest mixes using the maximum length of shaft.

LIGHT SOCKET OPERATION: Wherever either 115 volt, 60 cycle single phase AC or Direct Current is available, this relatively inexpensive vibrator will do a bang-up job of concrete placement.

28 FOOT REACH: Available with any length of shaft up to 28 feet. Maximum length makes hard-to-get-to places readily accessible — saves time by making frequent changes of vibrator location.

CONVENIENT — RUGGED CONSTRUCTION: Double grip, skid-base handle with finger-tip control switch. Weighs only 50 lbs. Finest, smooth-running flexible shaft and fittings — built to take the most severe usage.

GRINDING: Countershaft attachment for quick conversion to wet or dry concrete rubbing.

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A. D. EDMONSTON, California State Engineer, made two controversial reports.

Engineer's reports cause of controversy

A. D. Edmonston has precipitated a controversy as the result of two reports he prepared as California's State Engineer.

One indicates it would be feasible and profitable for the state to issue revenue bonds for the construction of a $1.2-billion power and irrigation project on the Feather River (ENR Jan. 3, p. 27).

The second recommends state purchase of the Central Valley Project on which the federal government has expended some $600 million and eventually plans to invest $1.4 billion more (ENR Apr. 24, p. 24).

The attitude of most Californians on the Feather River development is "it would be wonderful if it can be done." Gov. Earl Warren is one who is convinced it can be done. With his backing, $800,000 became available in 1952-53 state budget to go ahead with plans and specifications.

Report envisions transporting Feather River water in the northern part of the state to deficient areas in the San Francisco Bay area and southern California.

Something else again is Edmonston's proposal for state purchase of the CVP development.

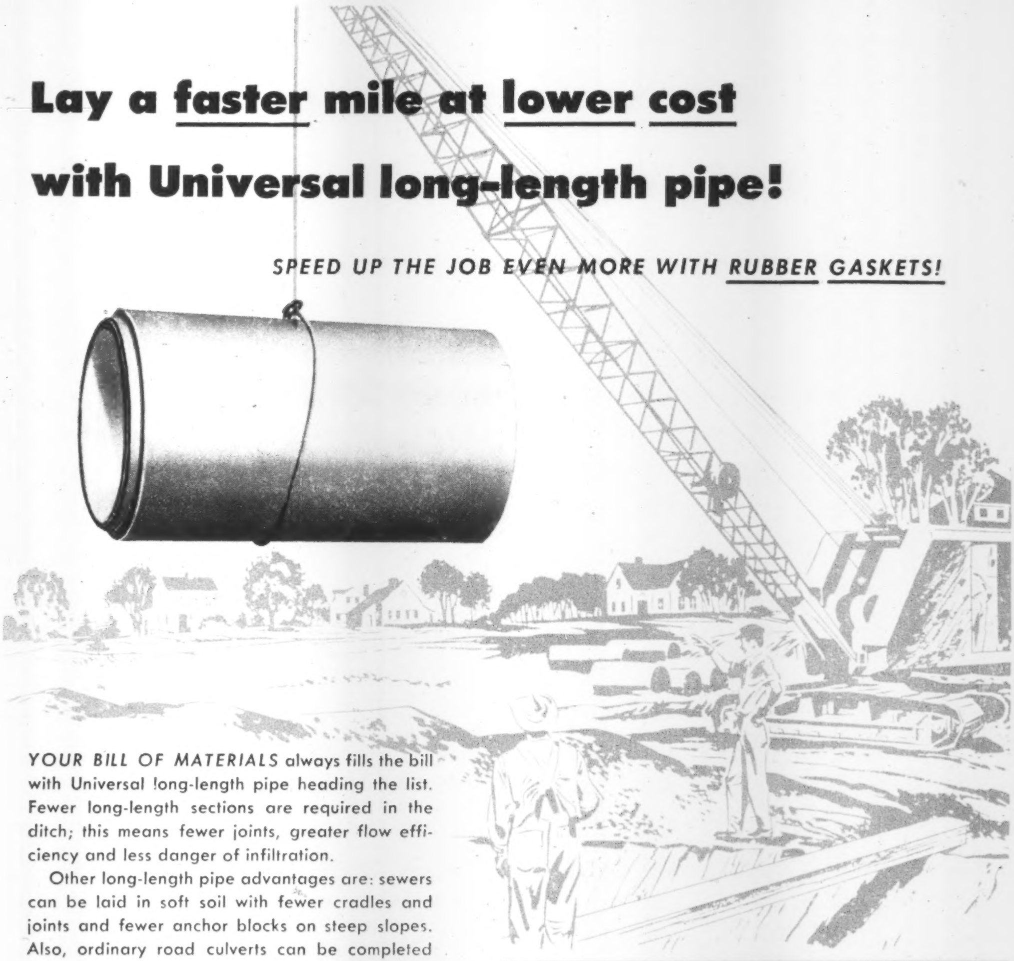
It has divided Californians into two camps, one enthusiastically pushing Edmonston's plan and the other scoffing at the scheme as "fantastic."

The California Water Project Authority has asked State Engineer Edmonston to submit a program for use

(*Men & Jobs continued on page 69*)

Lay a faster mile at lower cost with Universal long-length pipe!

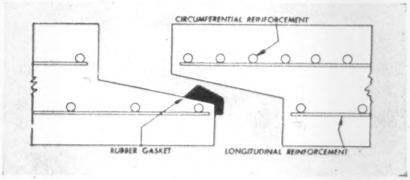
SPEED UP THE JOB EVEN MORE WITH RUBBER GASKETS!



YOUR BILL OF MATERIALS always fills the bill with Universal long-length pipe heading the list. Fewer long-length sections are required in the ditch; this means fewer joints, greater flow efficiency and less danger of infiltration.

Other long-length pipe advantages are: sewers can be laid in soft soil with fewer cradles and joints and fewer anchor blocks on steep slopes. Also, ordinary road culverts can be completed at great savings in time and labor. Long-length pipe is particularly adaptable for low-pressure sewer and water lines.

Specify Universal long-length on your next job.



RUBBER JOINTS ARE A MUST!

This low-cost, tough rubber gasket fits snugly between bearing surfaces of the concrete, forming a tight, lasting seal. Several types of rubber gaskets are available. (Type shown is a Miller gasket.)

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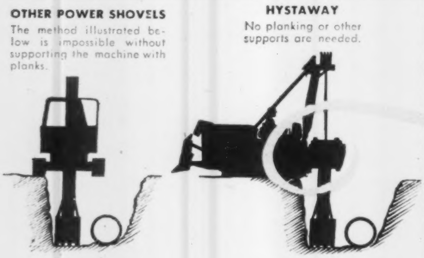
Exclusive HYSTAWAY® Design Advantages Pay Off for Pipeline Contractors

Not only was mud and rough mountainous terrain a problem contended with on the pipeline job shown, but in some instances trench excavation had to be accomplished by positioning the machines at right angles to the ditch. (Straddling in the conventional manner was not possible without shoring up, which is costly and time consuming.)

The Hystaway is capable of full production digging in this position and it is the only excavator-crane designed to swing the boom from a point to the rear of the tracks.

The diagram compares the Hystaway swing design to full revolving machines.



OTHER POWER SHOVELS

The method illustrated below is impossible without supporting the machine with planks.

HYSTAWAY

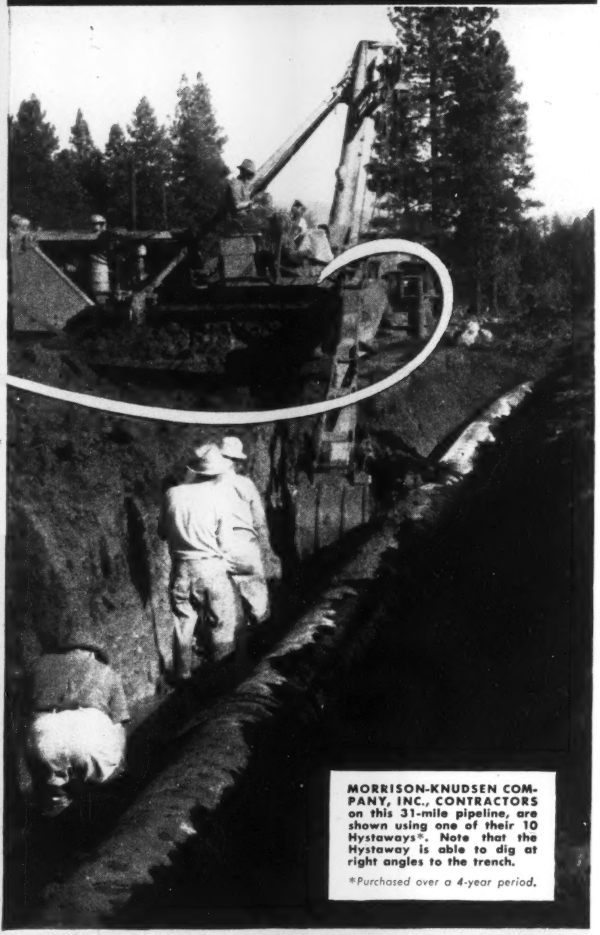
No planking or other supports are needed.

In addition, because the Hystaway mounts on a Caterpillar Track-type Tractor it combines high production excavator-crane work, with full tractor mobility and maneuverability. This permits moves to be made at tractor speeds, through mud, over rocky, mountainous terrain; also makes it possible to get into jobs *unassisted,* work in places inaccessible to other excavators.

The Hystaway can be equipped to operate as a Backhoe, Shovel, Dragline, Clamshell, or Crane. Controls and other operating features are similar to standards set for half-yard excavators.

The Hystaway mounts on Caterpillar D8, D7 and D6 tractors. After initial installation, mounting can be accomplished in approximately 1 hour and demounting in ½ hour. Removal of the Hystaway frees tractor for normal bulldozing, other jobs.

See your Caterpillar-Hyster dealer, or write for literature.



MORRISON-KNUDSEN COMPANY, INC., CONTRACTORS on this 31-mile pipeline, are shown using one of their 10 Hystaways*. Note that the Hystaway is able to dig at right angles to the trench.

**Purchased over a 4-year period.*

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HYSTER

of some of the $10 million in developing a detailed plan to carry out the state ownership proposal.

In the matter of purchase of the CVP, Governor Warren is one of the skeptics. He agreed to the budget provision for the $10-million "down payment" but in recent days said the question needs further study.

Various organizations favoring the federal Reclamation Law's 160-acre limitation provision are in opposition to state control of the CVP.

• **Ability**–The political upheavals haven't affected Edmonston's position. There has been no professional attack on his program. Edmonston's ability as an engineer is recognized as outstanding.

Receiving his Bachelor of Arts degree in Civil Engineering at Stanford University in 1910, Edmonston from graduation until 1924 worked on structures in connection with water projects in California. He also was employed as Resident Engineer on bridge and highway construction for Santa Clara County.

In 1924, Edmonston entered state employment and for the first three years was cost estimator for the State Division of Water Resources.

Then he became hydraulic engineer in charge of investigation of water resources of California. He was in charge of the formation of the State Water Plan and the CVP.

From 1927 to 1945 he was Principal Hydraulic Engineer of the Division of Water Resources.

He was named Assistant State Engineer in 1945 and when State Engineer Edward Hyatt retired in January, 1950, Edmonston was appointed to the post.

Although his duties require him to spend most of his time in his office in Sacramento, Edmonston likes nothing better than to get out into the field.

Friends say his main drawback is his lack of political finesse. "He has been busy being an engineer all his life," an associate remarked, "he never has had time to learn the intricacies of the game of politics."

As head of the California Division of Water Resources, secretary of the State Water Resources Board, executive officer and engineer for the California Water Project Authority, member of the State Water Pollution Control Board and member of the California District Securities Commission, Edmonston has a personnel of 400 under him.

(*Men & Jobs continued on page 70*)

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Mississippi Wire Glass Selected for Protection Qualities in Modern New York Building

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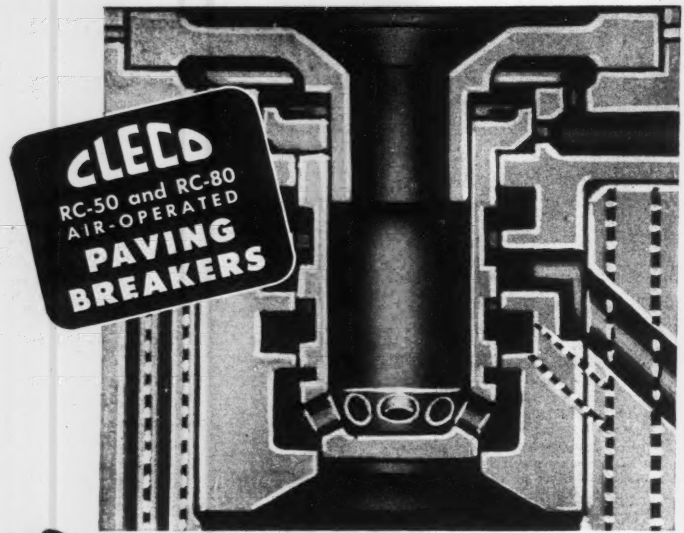

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The valve used in Cleco RC-50 and RC-80 Paving Breakers is similar to the type used in many large mining drills. Since it controls *both live air and exhaust* during power and return strokes, it gives Cleco Paving Breakers more sustained power, faster action, less recoil and longer life than other breakers in their classes.

***Hard hitting and fast action* result because air in front of the piston is exhausted to atmosphere — through the valve — during entire power stroke. Live air — rather than pressure in front of piston — trips the Cleco valve for the return stroke.**

***Less recoil* is a result of the valve action. Since air in back of piston is exhausted through valve during return stroke, avoiding recompression, less air is required to return the piston and recoil is reduced.**

***Longer life and sustained power between repairs* is possible because valve action is independent of piston wear . . . a full stroke is assured even with a worn piston.**

Many contractors report that Cleco Paving Breakers hit harder and faster, have less recoil, produce more work per man-hour and cost less to maintain than any other tools in their classes.

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• **Work**—At the present time the Division of Water Resources is preparing bulletins No. 2 and 3 of the State Water Plan (ENR Sept. 27, 1951, p. 48).

Bulletin No. 1, completed recently, brought up to date the water resources of the state. Bulletin No. 2, scheduled for completion in the next two years, will be a complete inventory of present water and land use in California. Bulletin No. 2 also will predict the ultimate water requirements of the state. Bulletin No. 3 scheduled to be off the press in the next four years, is a master plan for the development of all the water resources of the state, including use for hydroelectric power, flood control and the transfer from areas of plentiful supplies to areas of deficiency.

His budget for the 1952-53 fiscal year includes $1.5 million for the support of the Division of Water Resources; $500,000 for cooperative work with the federal government; $800,000 for the Feather River project studies; $150,000 for surveys of the Santa Margarita River water problem; $500,000 for financing Water Resources Board activities and $100,000 for miscellaneous work.

As a striking example of the climatic differences in California, Edmonston frequently cites the fact that the Mattole River, in the northern end of the state, has an average yearly water runoff of 1.1 million acre-ft in a drainage basin of 273 sq mi.

In southern California's coastal area, from Ventura to Mexico's border, the runoff annually averages 1,227,000 acre-ft in a drainage basin of 10,955 sq mi.

"Our goal," reports Edmonston, "is to get the water from where it is going to waste to where it is needed."

Three bridge commissions received by D. B. Steinman

D. B. Steinman, consulting engineer, New York, has recently received three interesting suspension bridge commissions—from the Port of New Orleans for feasibility and cost studies for an 1,800 or 2,000-ft span bridge over the Mississippi River; from a group of construction companies in France for the design of a 2,000-ft span bridge over the Seine River at Tancarville near Le Havre, to be submitted in competition with other designs and proposals; and from the Covington & Cincinnati Bridge Company for recommendations for modernizing its 1,057-ft span bridge over the Ohio River which was completed in 1867 by John A. Roebling.

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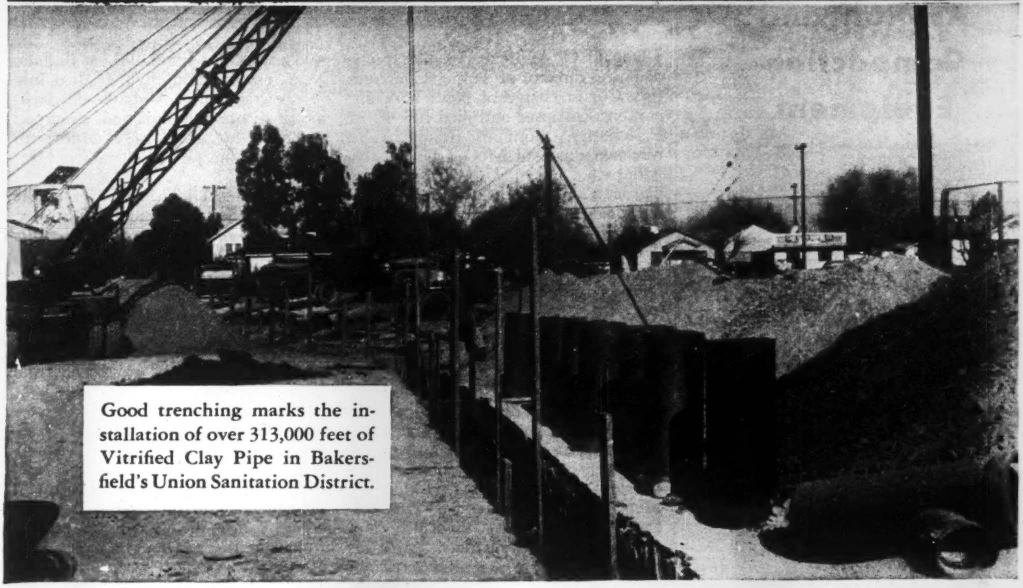

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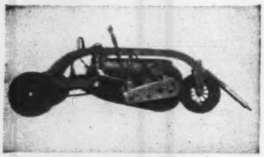

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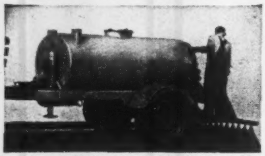

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OBITUARIES

• **Donald C. Andrews,** 50, vice president and director of Turner Construction Co. in charge of New York operations, collapsed and died July 12 in Eastchester. Born in Brooklyn, he was a graduate of McGill University, Montreal. He had been with the Turner Construction Co. since 1925, and had a long career as a project manager before becoming general superintendent of construction in 1947. He was a member of the Engineers Club in New York.

• **Thomas Burns,** 62, a member of the staff of Knappen-Tippetts-Abbett-McCarthy, New York consulting engineers, died July 7 in Athens, Greece after an illness of two months. In 1930, after 15 years in private industry, Mr. Burns joined the Corps of Engineers and was chief of the engineering division successively in the Huntington, Zanesville, Eastport, Denison, Providence, Syracuse, and Chicago engineer districts. After his retirement from government service in 1948, he served as technical consultant. His latest assignment, in Greece, came through a contract held by the Knappen firm with the government of Greece to study and prepare construction plans for 11 separate projects involving flood control, irrigation and electric power production. He was chief engineer of design on the project.

• **Elroy T. Agate,** 77, a former construction engineer for two Canadian railroads, died July 1 in Pittsford, New York. After graduating from Cornell University as a civil engineer in 1897, Mr. Agate went to Canada where he was employed as a construction engineer for the Canadian Pacific and Canadian National Railroads. He retired in 1935 and moved to Pittsford, New York.

• **Harry E. Clifford,** 86, former dean of the Harvard Graduate School of Engineering, Cambridge, Mass., died at Newton, Mass., July 8.

• **Mortimer D. Wandell,** 77, died June 27 at his home in Pawling, New York, after a long illness. He became associated in 1899 with the Conklin & Foss Co., a pioneer firm in large-scale crushed stone production. In 1918, he was elected vice president in charge of sales of the New York Trap Rock Corp. He became president and director in 1927 and retired in 1938.

• **Warwick R. Jewel,** 70, a Buffalo, N. Y. construction engineer died July 7. A graduate of Virginia Polytechnic Institute, he designed structural steelwork for many large projects in the Buffalo area.

• **Franklin P. Ulrich,** 61, chief of the California Seismological Field Survey, USC&GS, died in San Francisco July 3. A graduate of Union College, he took a post with the New York State Engineering Department and later was chief observer in the magnetic observatories at Tucson, Ariz., and Sita, Alaska. He was in charge of the California Seismological Field Survey from 1936 to 1944.

• **Jack E. McCarty,** 65, pioneer California surveyor, died July 4 at Mountain View, Calif. He joined the San Francisco engineering department near the turn of the century, and was active in replotting the city streets following the earthquake and fire of 1906. Mr. McCarty retired last February as deputy surveyor of Santa Clara County, most of which he had surveyed. He was also a former resident engineer with the state highway department.

• **James Benjamin Ward,** geologist, a member of the staff of Knappen-Tippetts-Abbett-McCarthy, a firm of consulting engineers, died July 9 in Port-Au-Prince, Haiti after a brief illness. Mr. Ward, at his death, was chief geologist on investigation and planning work for the design of the Artibonite River development project in Haiti.

• **George N. Wheat,** 74, who retired as a structural engineer from the Veterans' Administration in 1948, died June 22 in San Antonio, Texas.

• **Orris Bonney, Jr.** chief of the Columbus, O., Division of Sewers, Drainage and Sewage Treatment died July 9 at his home. A graduate of the University of Michigan in engineering, he has been associated with the city of Columbus for 29 years.

• **George A. Jenkins,** technical service engineer for Warren Brothers Company of Cambridge, Mass., with whom he was associated for more than 45 years, died suddenly July 1. As a consultant to the many Warren subsidiaries he was widely known as an authority on the design and construction of asphaltic pavements.

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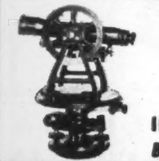

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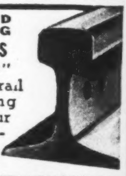

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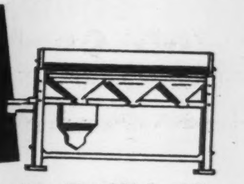

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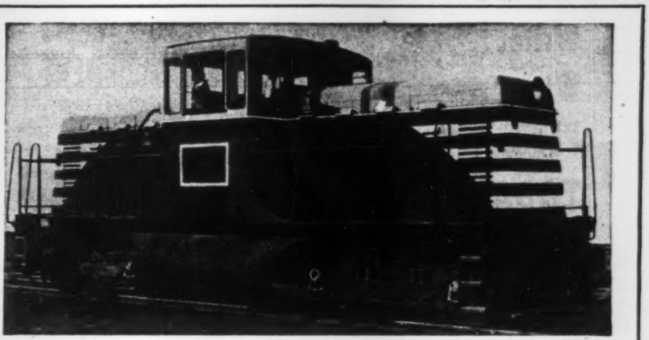

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1201 LIMA DRAGLINE

LATE MODEL
EXCELLENT CONDITION
PRICED TO SELL
BOOM 100' BUCKET 3½ YD

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Bay City, Mich.
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FOR SALE—1600 FT. OF NEW CARLON E PLASTIC PIPE

Complete with couplings and clamps. Priced at 2/3 original cost for immediate shipment.

ROBERTS & SCHAEFER COMPANY
130 North Wells Street, Chicago
Phone—Central 6-7292

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Cat. D-6 Late 1846 Hrs. Bargain
Duo-Way Scoop
1½ cu. yd. Bucket Demonstrator

Chas. M. Ingersoll Company
19930 Detroit Ave.
Rocky River, Ohio

STATIONARY COMPRESSOR

Sullivan WN-3 950 CFM with 185 HP GE Synchronous Motor, 2200 Volts
Excellent Condition $3000.00 F.O.B.
Synchronous Motor, 2200 Volts
Fort Gibson, Okla.

W. R. GRIMSHAW CO.
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70 Rolls

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6x6x6x6 Gauge—5'x150'—$30.00 per Roll
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that other readers can use, advertise it in the

SEARCHLIGHT SECTION

OFFICIAL PROPOSALS

Bids: August 5, 1952

Routes 17, 24 and S-24, Underground Structures for Traffic Signal Systems, Route 17, Borough of North Arlington, Bergen County; Route 24, Township of Maplewood, Essex County; and Route S-24, Township of Union, Union County.

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner

The principal items for installation are:
Estimated:

4,700	Lin. Ft. Conduit Installations
6	Units Service Installations
56	Units Concrete Foundations
16	Units Detector Installations
13	Units Junction Boxes
13	Units Push Button Installations
4	Units Meter Cabinet Connections

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, August 5, 1952, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Because of the character of the work to be performed under this contract, bids will be accepted only from contractors prequalified in the classifications of grading, paving, or general contracting.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes wil be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

Bids: August 1, 1952

Notice to Contractors of State Highway Construction

August 1, 1952

Sealed bids will be received by the State of Tennessee Department of Highways and Public Works at their Offices in the Cotton States Building, Nashvile, Tennessee, until 10:00 o'clock A.M.

August 1, 1952

HAMILTON COUNTY:
Project No. SAP-979-A—The Construction of a new Vehicular Tunnel and the reconstruction of the existing tunnel through Missionary Ridge at McCallie Avenue in Chattanooga.
Project Length 951 Feet
(Unloading Point—Chattanooga)

No Proposals will be issued after 9:00 O'Clock A.M. Friday Aug. 1, 1952.

THE ATTENTION OF THE BIDDER IS DIRECTED TO CHAPTER 135, ACTS OF 1945.

Contractor must prequalify with the Department of Highways and Public Works in accordance with Chapter 80 of the Public Acts of 1929, before any proposals will be furnished. PROSPECTIVE BIDDERS MUST HAVE FILED THEIR QUESTIONNAIRES FOR QUALIFICATION FIFTEEN (15) DAYS BEFORE THE DATE OF LETTING. QUESTIONNAIRES AND/OR FINANCIAL STATEMENTS MAY BE FILED WITH THE BID.

QUESTIONNAIRES AS OF Jan. 1, 1952 OR LATER, WILL BE REQUIRED OF ALL PROSPECTIVE BIDDERS IN THIS LETTING.

The right to reject any and all bids is reserved.

C. W. BEND, Commissioner

Bids: August 12, 1952

Interceptor Sewer D

NOTICE OF LETTING

CITY OF WILMINGTON, DELAWARE

Sealed proposals for furnishing materials and labor to construct Interceptor Sewer D and other work, Contract No. 6 of the City of Wilmington's Sewage Treatment Program, will be received from qualified bidders by the Board of Directors of the Street and Sewer Department, Room 251, City Hall, until 2:30 P.M., Eastern Daylight Saving Time, August 12, 1952, at which time and place they will be publicly opened and read aloud.

Each proposal shall be submitted in a sealed envelope, which shall be filled out correctly to clearly indicate its contents. If the proposal is forwarded by mail, it shall be enclosed in an additional envelope addressed to the Board of Directors of the Street and Sewer Department, City of Wilmington, Delaware. If submitted other than by mail, it shall be delivered to Room 251, City Hall.

The work to be done under this contract embraces the construction of the following:

Approximately	2,900	linear feet of	18 inch sewer
"	1,000	" " "	21 " "
"	1,500	" " "	24 " "
"	6,300	" " "	30 " "
"	9,000	" " "	36 " "
"	700	" " "	42 " "
"	3,000	" " "	drainage ditch
"	3,000	" " "	ditch cleaning

Miscellaneous outlet and drainage structures
Other miscellaneous work

Each bid shall be accompanied by a certified check in the amount of two (2) percent of the proposal, made payable to the Mayor and City Council of the City of Wilmington, Delaware.

Drawings and specifications may be obtained from the office of the Board of Directors of the Street and Sewer Department of the City of Wilmington, or from the office of Whitman, Requardt and Associates, 1304 St. Paul Street, Baltimore 2, Maryland, upon deposit of Twenty-Five Dollars ($25.00) for each set of drawings and specifications, which deposit will be refunded upon return of the plans and specifications in good condition. The drawings which are furnished prospective bidders for a deposit are one-half (½) scale reproductions of the originals. If a bidder desires a set of drawings which are full scale reproductions of the originals, he may obtain them upon payment of Ten Dollars ($10.00) for each set desired, which payment will not be refunded.

The Board of Directors of the Street and Sewer Department reserves the right to reject any or all bids and to accept the bid which, in its opinion, best serves the interests of the City.

By order of
Board of Directors of the Street and Sewer Department
Vaughn Clavey, President
Attested
James J. Livingstone, Secretary

Bids: August 5, 1952

Route 4, Sec. 4-E, and Route 17, Secs. 7B & 8D
Route 4, Sec. 3-C
Route 10, Sec. 8

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Route 4, Sec. 4E, from Hackensack River to Route 17, Closing Island Openings, and Route 17, Sections 7B & 8D, Intersection Revisions at Midland Avenue, Linwood Avenue and Hollywood Avenue, in municipalities of River Edge, Hackensack, Paramus, Ridgewood and Hohokus, Bergen County, Length 2.702 miles

and

Route 4, Sec. 3C, Reconstruction and Widening of Ramps at Jones Road Interchange, City of Englewood, Bergen County. Length 0.213 miles.

and

Route 10, Section 8, Revision of Pleasant Valley Way Intersection, Town of West Orange, Essex County. Length 0.116 miles. The principal items of construction are:

Roadway Items

Estimated:

4,650	cu. yds. Roadway Excavation—Earth
915	sq. yds. Pavement Excavation
1,138	cu. yds. Borrow Excavation
2,200	sq. yds. 10" Plain Concrete Pavement
4,523	sq. yds. 10" Rein. Concrete Pavement
1,719	sq. yds. Waterbound Macadam Base
1,719	sq. yds. Waterbound Mac. Inter. Course
220	tons Bituminous Conc. Surface Courses
1,057	lin. ft. Rein. Conc. Culvert Pipe
12,641	lin. ft. White Concrete Curb
	Electrical Items
3	Underground Structures for Traffic Signal System

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, August 5, 1952 at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

OFFICIAL PROPOSALS

Bids: July 31, 1952

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time on Thursday, July 31, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

OFFICIAL PROPOSALS

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. Nickerson, District Engineer, 353 Broadway, Albany, New York				
Warren	DA 52-3	Gore Mountain Access Road Project No. AM-3	3.80	Bit. Mac. D.S.T. Br. Stone	$1,700 Plans $10	$33,179
		DISTRICT No. 2				
		Lacy Ketchum, District Engineer, 109 No. Genesee St., Utica, New York				
Fulton	FARC 52-59	Meco-Caroga Lake, S. H. 618 Project No. S-700(2)	5.40	Asp. Conc. Ty. 1A Optional	$14,000 Plans $10	$242,000
		DISTRICT No. 5				
		C. R. Waters, District Engineer, 65 Court St., Buffalo, New York				
Cattaraugus	FARC 52-49	Arcade-Farmersville Pt. 2, S. H. 8115 Project No. F-180(2)	1.75	Asp. Conc. Ty. 1A Optional = 1.71 Mi. Misc. Work = 0.04 Mi.	$6,000 Plans $10	$100,000
Chautauqua	FASS 52-8	West Oak Hill Road, C. R. 120 Project No. S-294(1)	1.80	Bit. Mac. Ty. 1, Pen. Meth. = 1.79 Mi. Misc. Work = 0.01 Mi.	$5,500 Plans $10	$95,000
		DISTRICT No. 6				
		H. F. Brumm, District Engineer, State Office Building, Hornell, New York				
Steuben	RC 52-79	Bath-Hammondsport Pt. 1, S. H. 5517	0.80	Storm Sewer	$5,500 Plans $10	$100,000
		DISTRICT No. 7				
		C. C. Cassel, District Engineer, 444 Van Duzee St., Watertown, New York				
Franklin, Jefferson, Lewis, St. Lawrence	RC 52-80	Br. #1 Tupper Lake-Moddy, S. H. 985-A; Br. #2 Wawbeek-Lake Clear Jct., Pt. 1, S. H. 8135; Br. #2 Watertown-Carthage, Pt. 3, S. H. 428; Br. #4 Lowville-Carthage S. H. 5332-B; Br. #1, Potsdam-Nicholville, S. H. 5285; Br. #1 Dekalb-Heuvelton, S. H. 8113; Br. #1 Brasie Corners-Edwardsville, S. H. 1264		Painting 7 Bridges	$700 Plans $10	$13,000
		DISTRICT No. 8				
		J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, New York				
Westchester	TSP 52-2R	Taconic State Parkway	0.43	Asp. Conc. Ty. 1A, Opt.	$3,300 Plans $10	$60,000

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
Supt. of Public Works

U. S. Government

NOTICE TO CONTRACTORS
U. S. DEPARTMENT OF THE INTERIOR
OFFICE OF TERRITORIES
WASHINGTON 25, D. C.

Sealed bids will be received by the Chief of the Public Works Division, Office of Territories, Department of the Interior, Room 2713, Interior Building, Washington 25, D. C. until 2:00 P.M., 1952, August 28, Daylight Saving time, for the construction of the Christiansted Consolidated School and the alterations to the La Valle Elementary School, St. Croix, Virgin Islands.

At the time and place indicated above the bids will be publicly opened and read aloud. Bids received after the hour set for the bid opening will be returned unopened.

Plans and Specifications and other proposed contract documents are open for public inspection at the office of the District Engineer for the Virgin Islands, Thomas G. Mooney, Charlotte Amalie, St. Thomas, U. S. Virgin Islands; M. A. Dyer Company, 24 School Street, Boston, Masachusetts; Lester M. Marx, Chief, Public Works Division, Room 2713, Interior Building; Washington, D. C.; A. G. C. Office, 1113 Congress Building, Miami, Florida; Builders Exchange, 46 Northeast 6th Street, Miami, Florida; U. S. Department of Commerce, #2, Puerto Rican Reconstruction Administration Grounds, Building N, San Juan, Puerto Rico; F. W. Dodge Corp., 119 West 40th Street, New York 18, N. Y.

A set of such documents may be procured from the office of M. A. Dyer Company (Architect-Engineer) at 24 School Street, Boston, Massachusetts upon deposit of $50.00 by certified check payable to the Treasurer of the United States, all of which will be refunded to bona fide bidders upon the return of the plans and specifications in good condition within fifteen (15) days from the date of bid opening. A bona fide bidder includes any person who submits a bid for a general contract, but does not include a person who submits a quotation to the general contract bidders.

U. S. Government

To parties who procure plans and specifications upon payment of the above stated amount, and who do not submit a bid, $30.00 will be refunded upon the return thereof in good condition within fifteen (15) days from the date of the bid opening. No refund will be made for return after that time.

Each bid must be accompanied by a satisfactory bid security (certified check or bid bond) in an amount of not less than 5 per cent of the total bid.

The successful bidder will be required to furnish a performance bond and payment bond, each in the amount of 100 per cent of the contract price.

No bid may be withdrawn until thirty (30) days after the scheduled closing time for the receipt of bids.

The Government reserves the right to reject any and all bids and to waive informalities with respect thereto. The Government also reserves the right to award a contract for the various items on the basis of the basic bid or by the adoption of any or all of the deductible alternates, whichever is in the best interests of the United States.

LESTER M. MARX
Chief, Public Works Division
Office of Territories

OFFICIAL PROPOSALS

Bids: August 5, 1952

Route 6, Section 1K

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Route 6, Section 1K, Teaneck Road to Grand Avenue, Grading, Second Stage, in the Township of Ridgefield Park and Boroughs of Ridgefield and Palisades Park, Bergen County, Federal Project No. UI-117(3). Length 0.933 miles. The principal items of construction are:

Estimated:

107,000	cu. yds. Borrow Excavation
371	sq. yds. 10" Rein. Conc. Pavement
868	lin. ft. Rein. Conc. Culvert Pipe
108	lin. ft. Cast Iron Culvert Pipe
417	lin ft. corrugated Metal Culvert Pipe
570	cu. ft. Concrete Cribbing

Bids for the above will be received at the office of the State Highway Department. Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, August 5, 1952, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P. L. 769, 81st Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the State Employment Service, 309 State Street, Hackensack, New Jersey. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes wil be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and wil not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

OFFICIAL PROPOSAL

RATE: $1.50 per line (or fraction) per insertion.
CLOSING DATE: 10:30 A.M. Friday for issue out following Thursday.
SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

Bids: August 4, 1952

Erection and Construction of a 140,000 Gallon Steel Standpipe at Hampton Manor in the Town of East Greenbush, New York

NOTICE TO CONTRACTORS

Sealed bids for the construction and erection of a 140,000 gallon steel standpipe for Hampton Manor-Hillview Water District No. 4 in the Town of East Greenbush, Rensselaer County, New York will be received by George S. Fletcher, Town Clerk, at East Greenbush, New York until 7:45 P. M., Daylight Saving Time, on August 4, 1952, and bids will be opened by the Town Board at its regular meeting to be held on that day at 8:00 o'clock P. M., Daylight Saving Time.

Copies of the plans and specifications may be seen at the office of the Town Clerk and at the office of the engineers, Benjamin L. Smith & Associates, 11 North Pearl Street, Albany, New York and copies will be furnished upon a deposit of $5 per set. All non-bidders returning set or sets will be refunded $2 for each set.

The right is reserved to reject any and all proposals.

By order of the Town Board.

GEORGE S. FLETCHER
Town Clerk

Bids: August 6, 1952

Resurfacing Certain Areas La Guardia Airport Queens, New York

THE PORT OF NEW YORK AUTHORITY
CONTRACT O AND M—161
PROPOSAL NO. 862

Sealed proposals for resurfacing certain areas at La Guardia Airport, Queens, New York, will be received at the office of the Department of Purchase and Administrative Services, The Port of New York Authority, Room 1402, 111 8th Ave., New York 11, until 11:00 A.M. Wednesday, August 6, 1952, at which time and place said proposals will be publicly opened and read.

Contract documents may be seen at the office of the Department of Purchase and Administrative Services, Room 1402, and copies will be furnished upon deposit of $10 per set. Deposit must be delivered to Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Department of Purchase and Administrative Services, Room 1402, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition not later than 30 days after the opening of proposals.

The Port of New York Authority
HOWARD S. CULLMAN, CHAIRMAN

Bids: August 14, 1952

Delaware Memorial Bridge

DELAWARE MEMORIAL BRIDGE
NOTICE TO BIDDERS
CONTRACT NO. 24
RIGHT OF WAY FENCE

Sealed proposals for construction of right of way fence along the approaches to the Delaware Memorial Bridge, will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Administration Building, Delaware Memorial Bridge, Delaware, until 11 o'clock Eastern Standard Time, (12 o'clock Eastern Daylight Saving Time), August 14, 1952, at which time and place said proposals will be publicly opened and read.

The work involves the following approximate principal quantities:—

Corner and Pull Posts	60
End Posts	17
Line Posts	1475
Farm-Field Fence	24700 lin. ft.
Relocating Chain-Link Fence	570 lin. ft.

Performance of this Contract shall begin promptly after execution of the Contract and shall be completed on or before December 1, 1952.

Monthly payments will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check to the amount of at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within thirty (30) days from the date of opening proposals. The right is reserved to reject any or all bids.

One set of the Plans and two copies of the Specifications may be obtained from the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y., after July 24, 1952, upon payment of $10.00.

Any prospective bidder who has made such a deposit may secure extra blueprint copies of the Plans upon payment of 50 cents per drawing and an extra copy of the Specifications upon payment of $2.50 per copy.

Plans and Specifications need not be returned to the Engineers, and the above payments will not be refunded.

The Plans and Specifications and other contract documents may be examined at the office of the Engineer, Howard, Needles, Tammen & Bergendoff, or at the Engineers' project office located north of and adjacent to the west abutment of the Delaware Memorial Bridge in the State of Delaware.

State Highway Department
by: J. Gordon Smith, Chairman
W. A. McWilliams, Director
Delaware Crossing Division
July 24, 1952

Bids: August 5, 1952

New Jersey—Spruce Avenues Connection

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Construction of New Jersey-Spruce Avenues Connection from Third Avenue to Delaware Avenue in the City of North Wildwood, Cape May County, Federal Aid Secondary Project No. S-184(1). Length 0.369 miles. The principal items of construction are:

Estimated:

3,582 cu. yds. Roadway Excavation
11,754 sq. yds. 6" Gravel Foundation
1,481 tons Bituminous Material
2,527 sq. yds. Conc. Gutter, Drives & Sidewalk
3,600 lin. ft. Concrete Curbs
1,842 lin. ft. Drainage

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, August 5, 1952, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Secondary Proect" authorized by the provisions of Title 27 of the Revised Satutes of New Jersey and supplements, and by P. L. 769, 81st Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in he specifications, which privisions require that labor be employed from lists furnished by the State Employment Service, 3002 Pacific Avenue, Wildwood, New Jersey. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

Bids: August 19, 1952

Intercepting Sewers and Appurtenances, Sewage Pumping Station and Sewage Treatment Plant for Northumberland Sewer Authority of Northumberland, Pennsylvania

Sealed proposals will be received by the Northumberland Sewer Authority, Northumberland County, Pennsylvania, at the Borough Building, Northumberland, Pennsylvania, until 8:00 p.m. Eastern Standard Time on the 19th day of August, 1952, for constructing a sewage treatment plant complete with appurtenances including a sewage pumping station and intercepting sewers. The work will be divided into four (4) contracts designated as follows:

CONTRACT NO. 1—General
CONTRACT NO. 2—Heating and Ventilating
CONTRACT NO. 3—Electrical
CONTRACT NO. 4—Plumbing

Proposals will be publicly opened and read at the time and place designated for said meeting.

Copies of plans, specifications and other contract documents are on file and open to public inspection and may be examined at the offices of Michael Baker, Jr., Inc., Baker Building, 115 Shields Street, Rochester, Pennsylvania or Russell S. Machmer, 212 Market Stret, Sunbury, Pennsylvania. Copies can be obtained at either of said offices upon payment of Twenty Dolars ($20.00) for each set. Any bidder, upon returning such set in good condition within ten days after the opening of bids, will be refunded his payment; and any non-bidder, upon returning such set, will be refunded Ten Dollars ($10.00). For documents not returned within the stated time, the entire amount will be forfeited.

The Northumberland Sewer Authority reserves the right to waive any informalities in or to reject any or all bids.

Each bidder must deposit with his bid, security in the amount of at least five (5) percent of the amount of the bid in the form of a Bid Bond or Certified Check made payable to the Northumberland Sewer Authority.

No bidder may withdraw his bid within (30) days after the actual opening thereof.

The National Production Authority has assigned a DO T-8 rating and a T-8 allotment to this project.

Bids must be addressed to Mr. R. W. Eisenhower, Secretary, Northumberland Sewer Authority, Northumberland, Pennsylvania.

Northumberland Sewer Authority
R. W. Eisenhower, Secretary

U. S. Government

Department of Commerce, Bureau of Public Roads, July 8, 1952. SEALED BIDS will be received at the office of the Bureau of Public Roads, Gatlinburg, Tennessee, until 1:30 p.m., E.S.T., August 6, 1952, for Project 15A1 (Roadwork), Foothills Parkway, Sevier County, Tennessee. From Dudley Creek 0.893 mile to Banner Bridge. The approximate quantities of the more important items are 126,700 cu. yd. Excavation, 16,000 tons Crushed Gravel or Crushed Stone, 250 cu. yd. Stone Masonry and 1,360 lin. ft. Concrete Culvert Pipe. Minimum wage rates have been fixed as required by law. Plans, specifications and proposal forms are available upon request at the office of the Division Engineer, 1440 Columbia Pike, Arlington, Virginia, or at the address given above. H. J. Spelman, Division Engineer.

OFFICIAL PROPOSALS

Bids: August 7, 1952

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, Albany, N. Y.,—Pursuant to the provisions of the Highway Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time on Thursday, August 7, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1						
WM. ROBINSON, District Engineer, 301 E. Water Street, Syracuse, N. Y.						
Cayuga....	O.T. 52-11P R.C. 52-78 S.T. 52-17	New York State Thruway Ontario Section, Sub. 4 & 5a (Montezuma-Port Byron); Port Byron-Conquest, S.H. 8087; Montezuma-Port Byron, S.H. 5610; Weedsport-Cato, SH686; Green Street Connection; Town Road & Marginal Road North of Port Byron	6.40 (2.55 Cross Rds.)	8" & 9" Cem. Conc. Pavt. 2 at 25′, 25′, 24′ & 22′ Wide = 7.73 mi. Asph. Conc. Ty. 1A, Opt. = 0.72 mi. Bit. Treated Gravel = 0.24 mi. Misc. Work = 0.26 mi. 4 Hy. Seps. Alpha I-Beam 320.33′; 216′; 220.33′ & 211′ 1 Br. 3 Sp. I-Beam 221.08′	$125,000 Plans $100	$2,209,000
Seneca	FASS52-12 FAS SH52-11	Mount Road, C.R. 104 Magee-Clyde, Pt. 1 Proj. S284(2)	3.85	Asp. Conc. Type 1A, Opt.	$17,000 Plans $10	$303,000
DISTRICT No. 5						
C. R. WATERS, District Engineer, 65 Court Street, Buffalo, N. Y.						
Erie	R.C.52-50	Southwestern Boulevard, S.H. 9269	5.20	Asph. Conc. Type 1A, Opt.	$35,000 Plans $10	$613,000
DISTRICT No. 7						
C. C. CASSEL, District Engineer, 444 Van Duzee Street, Watertown, N. Y.						
Lewis	FARC52-77	Copenhagen-Lowville, Pts. 1 & 2, S.H. 1020-847 Proj. F1043(2), F864(3)	8.38	Asp. Conc. Type 1A, Opt.	$22,000 Plans $10	$405,000
DISTRICT No. 8						
J. S. BIXBY, District Engineer., Pleasant Valley Road, Poughkeepsie, N. Y.						
Ulster	RC52-87	Marlboro-Cedar Hill Cemetery, SH5176 Milton-Marlboro, SH5114	3.39	Asp. Conc. Type 1A, Opt.	$9,000 Plans $10	$166,000
Westchester	RC52-86	Yonkers-White Plains, SH5231	0.72	Storm Water Sewer	$4,000 Plans $10	69,000
DISTRICT No. 10						
J. J. DARCY, District Engineer, Montauk Highway at Little East Neck Road, Babylon, L. I.						
Bronx	FACBE 52-1	Cross Bronx Expressway, Cont. 9S Proj. UI-1084(16)	0.65 (Exp.) (1.72 Acc.)	9" Cem. Conc. Pavt. 2 @ 36′ & Var. = 0.95 Mi. Sheet Asp. Pavt. = 1.23 Mi. Misc. Work = 0.19 Mi. Hy. Sep. 2 Sp. Rigid Frame 99.67′ Hy. Sep. 2 Sp. Rigid Frame 103′	$262,000 Plans $100	4,756,000
Nassau	PSC 4671 7282	Elimination of Grade Crossing of Long Island R.R. with Massapequa-Glen Cove SH 9017	(R.R. 0.98) (Hy. 0.24)	9" Cem. Conc. Pavt. Var. Wid. = 0.24 Mi. R.R. Track Work = 0.98 Mi. R.R. Sep. 2 Plate Girders 58.89′ R.R. Sep. Twin Plate Girders 93.07′ & 93.86′	$61,000 Plans $25	$1,108,000
Suffolk	FARC52-81	Bridgehampton-Devon, Pt. 1 S.H. 1495 Proj. F-559(7)	1.85	Asp. Conc. Type 1A Opt.	$11,000 Plans $10	$190,000

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
Supt. of Public Works

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3755) will be received at Friant, California, until August 14, 1952, for furnishing labor and materials for earthwork and structures, turnout extensions, and venturi meter installations, Friant-Kern Canal, Station 1983+20 to Station 2823+93, Central Valley Project, California. Location: Vicinity of Orange Cove, California. Principal items are: 9,200 cu. yds. excavation; 30 cu. yds. concrete; 800 lin. ft. concrete pipe; installation of 13 steel insert venturi meters; and other work. Completion time 160 days. For particulars, address Bureau of Reclamation, Friant, California; or Building 53, Denver Federal Center, Denver, Colorado.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3752) will be received at Canyon Ferry, Montana until August 12, 1952, for furnishing labor and materials for: Completion of Canyon Ferry Dam, Power Plant and Switchyard. Location: 16 miles northeast of Helena, Montana. Principal items are: Erecting structural steel, 136,000 lbs.; installing metalwork, 100,000 lbs.; furnishing and installing heating and ventilating system, lump sum; installing sum; furnish and constructing 12.47-kilovolt distribution line, lump sum; and other work. Completion time 420 days. For particulars, address Bureau of Reclamation, Canyon Ferry, Montana; or Building 53, Denver Federal Center, Denver, Colorado.

U. S. Government

Bids: August 11, 1952

Hangar No. 6—Superstructure

NEW YORK INTERNATIONAL AIRPORT
HANGAR NO. 6
SUPERSTRUCTURE
CONTRACT NYA-280.004

Sealed proposals for the construction of the superstructure for Hangar No. 6 at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 8th Ave., New York 11, until 11:15 A.M., Monday, August 11, 1952, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials, Room 1110, and copies will be furnished upon deposit of $25 per set. Deposit to be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt should then be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than 30 days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, July 24, 1952

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-3758) will be received at Denver, Colorado, until August 19, 1952, for furnishing eighteen 75,000 lb. capacity radial-gate hoists for Nimbus Dam, Central Valley Project, California. Delivery is desired within 480 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver, Colorado.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3753) will be received at Townsend, Montana, until August 5, 1952, for furnishing labor and materials for Toston Tunnel and access road, Crow Creek Pumping Unit, Three Forks Division, Montana, Missouri River Basin Project. Location near Toston, Montana. Principal items are: 4,000 cu. yds. tunnel excavation; 64,000 cu. yds. other excavation; 1,240 cu. yds. concrete tunnel lining; 130 cu. yds. concrete in structures; and other work. Completion time 400 days. For particulars, address Bureau of Reclamation, Townsend, Montana; or Building 53, Denver Federal Center, Denver, Colorado.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3128) will be received by Bureau of Reclamation, Great Falls, Montana, until August 12, 1952, and then publicly opened for furnishing labor and materials and performing all work for the construction of Tiber Dam and dike. The work is situated about 13 miles south of Tiber, Montana. Principal items are approximately: 16,000,000 cu.yds. excavation; 11,300,00 cu.yds. embankment; 44,000 cu.yds. concrete; and other work. The work is divided into two schedules. Time allowed for completion will be 1,200 days. For particulars, address Bureau of Reclamation, Great Falls, Montana; or Building 53, Denver Federal Center, Denver, Colorado.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3754) will be received c/o District Public Works Officer, 11th Naval District, 1220 Pacific Highway, San Diego, California, until August 12, 1952, for furnishing labor and materials for earthwork, pipe line and structures, North station 138 + 86 to North Station 1901 + 60 San Jacinto-San Vicente Aqueduct, San Diego Project, California. Location: Near Hemet, California to Fall Brook, California. Principal items are: 750,000 cu. yds. excavation; 30 miles of 48-, 60-, and 75-inch diameter cylinder and non-cylinder precast concrete pipe; and other work. The work is divided into 3 schedules. Completion time 730 days. For particulars, address Bureau of Reclamation, Escondido, California; or Building 53, Denver Federal Center, Denver, Colorado.

DPA material allocations show shift in copper

Schools, hospitals, highways, housing and military construction will get more copper in the fourth quarter than in the third, the National Production Authority disclosed in announcing fourth quarter allocations of copper and aluminum.

But some of construction's best customers are going to get less. There will be less copper for Army civil functions, the Atomic Energy Commission and Defense Electric Power Administration.

As in the past, the biggest single claimant is the Defense Department. In the fourth quarter, the Defense Department will get 269,887,000 pounds of copper, compared to 252,366,000 pounds in the third quarter, and 250,000,000 pounds of aluminum for the fourth quarter as against 227,000,000 pounds in the third.

The Defense Electric Power Administration, another heavy claimant, will get 55,597,000 pounds of copper in the fourth quarter. This is almost a 15% cutback. The DEPA also took a heavy cut in aluminum, dropping from 59,800,000 to 50,000,000 pounds.

Copper allotments for schools and hospitals went up slightly, while their aluminum allotments for the fourth quarter went down. The Federal Security Agency will get 5,800,000 pounds of copper for schools, and 200,000 pounds of aluminum. This compares to 5,520,000 pounds of copper for schools in the third quarter and 226,000 pounds of aluminum.

- **Another increase**—The Bureau of Public Roads will get 980,000 pounds of copper in the fourth quarter, almost 25% more than in the third. But BPR's aluminum allotment was cut 35%.

The Housing and Home Finance Agency will get 3,400,000 pounds of copper, up 2% over the third quarter allotment. But HHFA will get no aluminum allotment at all. In the third quarter they received an allotment of 100,000 pounds of aluminum.

Twenty-three cuts in copper and aluminum allotments hit some claimant agencies hard. For example, the Atomic Energy Commission is allotted 3,512,000 pounds of copper in the fourth quarter—36% less than in the third.

And percentagewise, the drop in Atomic Energy Commission aluminum allotments was even greater—43%—with 3,324,000 pounds allotted for the fourth quarter.

Other claimants did not fare quite as badly (see table).

NPA "sat" on the fourth quarter copper and aluminum allocations hoping for a break in the steel strike so that fourth quarter steel allotments could be determined at the same time.

They finally issued the copper and aluminum allocations alone in order to give users enough "lead-time."

This also was expected to push the imported copper program, according to Henry H. Fowler, NPA Administrator.

	Fourth Quarter 1952 Allotments		Third Quarter 1952 Allotments Authority as of June 17, 1952	
	Total Copper (000 lb)	Total Aluminum (000 lb)	Total Copper (000 lb)	Total Aluminum (000 lb)
Army, (civil functions)......	**1,418**	**70**	1,475	148
Atomic Energy Commission..	**3,512**	**3,324**	5,479	5,804
Defense, Department of.....	**269,887**	**250,000**	252,366	227,000
Defense Electric Power Admin.	**55,597**	**50,000**	64,750	59,800
Federal Security Agency				
Education	**5,800**	**200**	5,520	226
Hospitals	**3,875**	**390**	3,325	230
General Services Admin.....	**3,920**	**100**	4,122	100
Housing and Home Finance Agency	**3,400**	.....	3,320	100
Petroleum Admin. for Defense	**8,752**	**1,700**	9,150	1,500
Public Roads, Bur. of......	**980**	**130**	785	200
Veterans Administration	**910**	**54**	1,175	55
Building Materials Division..	**74,972**	**87,261**	76,209	83,262
Construction Machinery Div..	**7,371**	**2,780**	7,275	2,545
Facilities Bureau—total	**21,750**	**11,700**	32,155	10,478
Lumber Wood Products Div..	**156**	**1,190**	160	1,147
Water Resources Division...	**2,686**	**150**	2,715	200

DPA watchdog group cuts back expansions

The Facilities Review Board of the Defense Production Administration has knocked out $66 million in new construction in its first eight months of existence, according to Olaf Tackle, board chairman.

The board was set up last November to prevent the building of duplicate plants and facilities. Under government regulations, proposed new construction or expansion of facilities with an expected expenditure of $500,000 or more must be reviewed by the board.

During June, the board reviewed 65 expansion projects. Of these projects it found eight available idle plants and five projects with adequate facilities.

Of the 422 cases handled so far, the board has recommended using 61 alternated facilities instead of constructing new ones, and has located 50 available idle plants.

$67 million earmarked for school projects

Federal funds totaling more than $67 million have been reserved for school construction projects in "federally affected" defense areas, the Office of Education of the Federal Security Agency announced last week.

These funds were set aside to provide grants to local school districts for critically needed school buildings in overcrowded boom towns.

Funds are being reserved for 579 projects for which applications have been fully processed. More projects will get funds later, when field reports have been completed.

(*Continued on page 88*)

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Capacities—10 to 5000 gpm; and heads to 75 feet

For complete data refer to Sweet's Engineering or Architectural Files. Also write for Bulletin 3-8000 covering Heavy Duty Wet Pit Pumps.

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Address ....
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State ....
Materials Pumped ....

Funds for schools . . .

(*Continued from page 87*)

The community facilities service of the Housing and Home Finance Agency reviews project applications, checking fiscal and engineering plans, and has responsibility for supervision of construction and engineering features.

School districts which have been allotted grants of $1 million or more include: Board of School Commissioners of Mobile County, Alabama, $1.1 million; Tucson School District No. 1, Arizona, $1.1 million; San Diego Unified School District, California, $1.6 million; Mount Diablo Unified School District, California, $1.1 million; Muscogee County School District, Georgia, $1.6 million; Board of Education of Hartford County, Maryland, $1 million; Albuquerque Municipal School District, New Mexico, $1.1 million; Union Free School District, No. 3, Nassau County, New York, $1 million; Independent School District No. 8, Comanche County, Oklahoma, $1 million; School Board of Norfolk County, Virginia, $3.5 million; Arlington County School Board, $2 million; School Board of City of Portsmouth, Virginia, $2 million; Shoreline Public School District No. 412, King County, Washington, $1.5 million; Rural Oahu School District, Oahu, Hawaii, $1.3 million.

Fast tax writeoffs

From June 27 through July 2, the Defense Production Administration issued Certificates of Necessity for fast tax writeoffs for defense facilities amounting to $190.6 million.

Three largest certificates issued were: Southern Pacific Co., San Francisco (home office), railway transportation, $29.9 million; Chesapeake & Ohio Railway Co., Cleveland (home office), railway transportation, $11.3 million; and Shell Oil Co., Wilmington, California, gasoline, $7 million.

With the latest Certificates of Necessity, fast amortization amounting to $20,766 million now has been approved for 12,086 defense facilities.

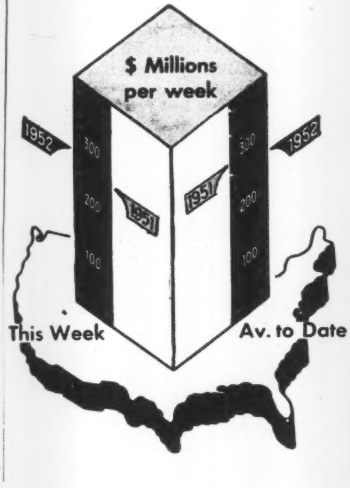
Folsom Dam builders plan sideline—gold

Contractors for Folsom Dam on California's American River plan to do a little gold panning on the side—they're setting up a gold reclaimer in their aggregate plant.

Merritt, Chapman & Scott, of New York, and Savin Construction Co., of Hartford, Connecticut, expect to do well with the project because it was only a few miles upstream from the dam site that gold in the area was first discovered by James Marshall in 1848.

Activity This Week

As reported to ENR
(in millions of dollars)



Contracts by type of work

	This Week	Cumulative 30 wks 1952	Cumulative 30 wks 1951	Cumulative 30 wks % chge
Waterworks	$2.8	$135.1	$131.3	+3
Sewerage	10.4	160.4	183.1	−12
Bridges	11.4	229.1	191.6	+20
Highways	34.0	899.1	674.9	+33
Earthwork, Waterways	5.5	314.3	330.1	−5
Buildings:				
Public	50.3	1,196.2	1,393.1	−14
Housg., pub.	16.3	473.9	516.9	−8
Housg., priv.	98.1	1,785.5	1,144.2	+56
Commercial	7.8	364.9	402.5	−9
Industrial	14.7	1,631.9	2,569.2	−36
Unclassified	26.9	771.2	1,124.7	−31
Total	**$278.2**	**$7,961.6**	**$8,661.6**	**−8**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes

		Base Year = 100 1913	1926	1949
Constr. cost	**July**	**570.65**	**274.31**	**119.63**
	June	561.69	270.00	117.75
Bldg. cost	**July**	**414.46**	**224.04**	**117.81**
	June	412.50	222.98	117.26
Volume	**June**	**543**	**221**	**157**
Constr. cost	**July**	**570.65**	**274.31**	**119.63**

$94-million RFC loan made to copper firm

After three months of haggling, the Reconstruction Finance Corp. last week made its biggest single business loan to date: $94 million to the San Manuel Copper Corp., Pinal County, Ariz. Matched by more than $25 million in private funds, the loan will be used to develop the largest untapped copper deposit in North America, 43 miles northeast of Tucson, Ariz.

San Manuel has yet to produce copper. It was set up as a wholly-owned subsidiary of the Magma Copper Co., New York City, which has mined copper in Arizona since 1911. In turn, 22% of Magma's stock is owned by the Newmont Mining Corp., a New York holding company which has mining interests all over the world.

The loan was held up while RFC prodded Magma for private money to supplement government funds. Magma had applied for $111,288,000 after investing $10 million for exploratory work on the San Manuel project. Newmont was reluctant to get into the act in a big way; Magma makes up less than 5% of its total holdings.

By 1957, when full production will have been achieved, San Manuel will be the nation's sixth or seventh largest copper producer. Its operations will boost domestic output 8%. In addition to 140 million lb of copper a year, the San Manuel mine will produce 6 million lb of molybdenum. That'll be a 16% hike in domestic molybdenum output.

San Manuel will be a comparatively low-cost producer, conducting standard mining operations. This impressed RFC. Such was not the case in November, 1951, when RFC lent $57.1 million to Michigan's White Pine Copper Co. (a high cost operator using new methods to extract its ore).

The overriding factor, of course, was the extreme essentiality of copper. And Defense Materials Procurement Agency, in recommending the San Manuel loan, played this tune for all it was worth. DMPA is now negotiating a long-term procurement contract with San Manuel.

RFC's $94-million loan is for 20 years. The agency expects repayment in less time, however. In addition to an underground mine, San Manuel will build milling and smelting facilities at the project, utilities, transportation facilities, and also will establish a town site.

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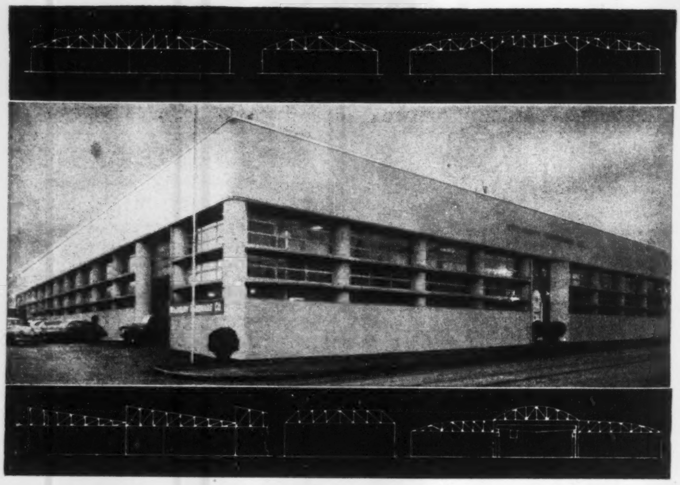

Space for Maneuvering

in Commercial and Industrial Buildings

Costs took a two-way beating with the construction of this warehouse. Construction costs were minimized by the Timber Structures trusses which form and support the roof. And operating costs are kept gratifyingly low by the absence of obstructing posts and consequent freedom of movement which encourages efficient use of materials handling equipment.

These trusses are available in all spans to 250 feet or more, and are available for curved, flat, pitched or variable roof contours. Hoists, monorails, heating units, mezzanines, balconies and other local loadings are accommodated in design. Carefully engineered, precision made; sturdy; stiff; strongly resistant to destruction by fire.

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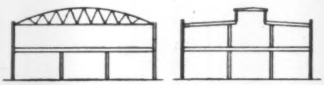

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Vermont plans aid for industrial building

In yet another variant of schemes to provide financial aid for industrial construction, Vermonters revealed plans for a privately-operated state development corporation that would lend money for "construction, expansion or improvement of industrial, recreational and agricultural operations."

Special legislation to authorize such a corporation—and particularly to provide for tax exemption for its earnings and dividends—is now being prepared by the Vermont Development Commission, according to Clifton R. Miskelly, who is the managing director.

• How is works—In line with efforts of its New England neighbors to hold industry in the area, the Vermont proposal differs from most other plans now in effect or under discussion (ENR Jan 17, p. 86) in one important respect:

The Vermont Development Credit Corporation would be a privately-operated organization, in which the state will be a stockholder, but not the principal stockholder or operator. (Maine's program for industrial development is similar.)

Changes in state law will be needed to permit tax exemptions on earnings, state banks to own stock in the new corporation, and to allow state banks to pledge 2½% of their capital accounts.

Basic capital funds for the new corporation would consist of $250,000 to come from public subscription of 50,000 shares of stock at $5 per share. Participation by state and national banks, insurance companies and savings and loan corporations would provide additional money.

Unlike the Maine plan, Vermont would permit broader authority for its State Banking Commissioner over terms of financial institutions; and the fact that the Vermont corporation would pay dividends on earnings, if any.

• Bankers dubious—There is some question, however, as to how this plan squares with the long-known and growing objection by banking circles to further extensions of state credit to purely industrial uses. Tax exemption might be considered such an extension.

The bankers have contended that this type of loan (for expansion or construction of new plants for industry) is a matter that should be held as a private capital province. They have gone so far as to actually boycott offerings of bonds by southern states and municipalities which seek the money to aid industry.

The federal government, also, has been increasingly unhappy with the states' extension of their own tax-exemption privileges to such enterprises, on the theory that the federal treasury suffers a loss in revenue through them.

Business briefs

• **Ohio leads defense work**—Ohio, where business firms have obtained 1,125 Certificates of Necessity for plant construction and expansion valued at $1.3 billion, leads all the states in number of government-aided defense projects, Defense Production Administration said last week. Pennsylvania led in dollar value, however, with 920 certificates for $1.8 billion of work.

• **Aluminum rolling mill**—Aluminum Company of America will install a $4.5-million rolling mill at its Davenport, Iowa, works, to handle widths up to 10 ft for aircraft production and other applications.

• **Guatemala asks help**—Apparently because of its failure to obtain U. S. export permits for needed construction machinery, Guatemala has abandoned its plans to handle all of a $75-million roadbuilding program with its own forces. Instead, said Robert Fanjul, Minister of Economy, Guatamala has decided to invite U. S. and other contractors to submit bids on the work.

• **Construction lending up**—Construction lending by savings and loan associations hit an all-time high for any one month last May, the National Savings and Loan League reports. Nearly $190 million was channeled into construction lending by members of the league—$10 million more than the previous high month of June, 1950, and 28.5% higher than in the month of May, 1951.

• **Railroad bridge**—An 800-ft curved railroad bridge for the Pennsylvania Railroad, to facilitate deliveries of coal for a new power station near Martins Creek, Pa., is now under construction by the contracting division of Dravo Corp. The structure will include seven river and two land piers of concrete, carrying a steel girder structure.

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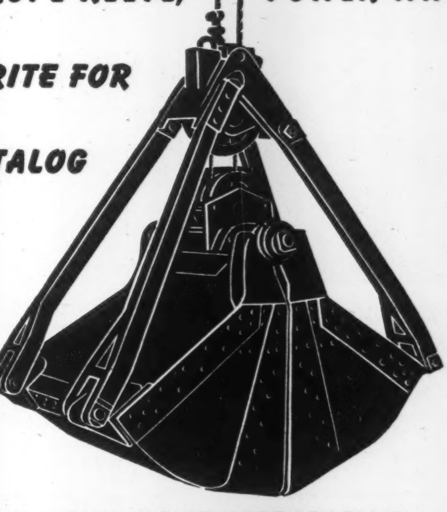

INDUSTRIAL BROWNHOIST CORPORATION
BAY CITY, MICHIGAN
157

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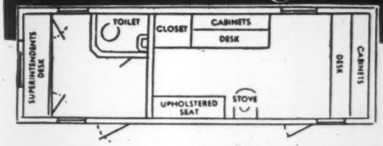

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WITH OPEN PUMPING, BOTTOM ROSE 6 INCHES OVERNIGHT

THIS EXCAVATION, 25 ft from Broward River, was planned with steel cofferdam plus ordinary open pumping. But, on reaching subgrade at elevation −12, several very heavy boils were noted and bottom did, in fact, rise 6 inches that same night.

- Like others who have once tried the Griffin "quick-dry" method, this leading contractor called for it again. Soil was tricky—very fine sand with intermediate layer of river muck. Yet Griffin Wellpoint system took only 48 hrs to end all boiling action, give dry stable subgrade and write a good concluding sentence to the story: "Job completed on schedule."

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UNIT PRICES

Highway project, Wash.

Asphaltic concrete pavement is being used for a seven mile, four-lane, Washington State highway project between Richland Wye and the Kennewick-Pasco Bridge on U. S. 410. It was necessitated because the existing roadway was flooded by the reservoir formed by McNary Dam. The improvement consists of two roadbeds, 24-ft wide, separated by a 76-ft median, with 10-ft outside shoulder and 3-ft inside shoulder. There is an interchange at both ends.

The pavement is being placed on five inches of compacted stone and three to seven inches of compacted ballast. Grading was performed by cats, dozers and carryalls; hauling of the stone and ballast by Euclids.

Although this is a limited access project with only one grade crossing, all work must be performed without interruption to traffic. A detour must be set up.

Materials suitable for common borrow, riprap, ballast, crushed stone surfacing, mineral aggregates and gravel may be obtained at no cost to the contractor from pits located near the project.

Work is under the general engineering supervision of Thomas P. Doyle, District Engineer at Yakima. Lloyd Mackey is the resident engineer.

Minimum wages rates per hour for this project range from $2.05 to $2.85 for skilled labor; $1.80 to $2.40 for semi-skilled; and $1.75 to $2.05 for unskilled.

Work began in February and must be complete in 270 days. Bidders include:

1C	Curtiss Gravel Co. & D-H Paving Co., Spokane, Wash. and Vancouver, Wash	$847,335
2	Peter Kiewit Sons Co., Longview, Wash	882,326
13	Parker Schram Co., Portland, Oregon	1,139,857

Bids: 2-19-52 Items	Unit	Quantity	Unit Prices 1C	 2
Clearing & grubbing	ls	1	$10,000	$6,500
Com exc incl haul—600-ft	cy	278,110	$0.30	$0.27
borrow	cy	282,085	0.25	0.28
trench	cy	545	1.75	2.25
Overhaul	stay	400,090	0.015	0.015
Overhaul	M stay	4,763	4.00	4.00
Structure exc	cy	5,292	1.75	1.60
Strip borrow & surf pits, incl haul—600-ft	cy	2,500	0.25	0.20
Pneumatic tired roller	days	109	60.00	50.00
Tamping roller	days	105	50.00	65.00
Mechanical tamper	days	90	30.00	36.00
Slope treatment, class A	lf	7,755	0.15	0.10
Finishing roadway	stay	754	12.00	9.50
Water	M gal	13,300	1.50	1.50
Crushed stone surface				
top course	t	59,415	1.10	1.30
base course	t	77,115	1.05	4.20
Ballast	t	129,405	0.90	1.00
Cruched cover stone in stockpile	t	6,100	0.80	0.80
Asphaltic Concrete Pavement				
Wearing course, class C	t	20,114	5.45	5.00
Level crse in place, cls L	t	20,114	5.45	4.80
Preparation of untreat rdway	mi	14	150.00	200.00
New fine mineral aggr	cy	2,500	1.50	2.00
Asph cmt, MC-3 prime coat	t	233	40.00	45.00
Top soil	cy	570	2.50	1.00
Cmt conc curb & gutter	lf	4,085	2.00	3.00
Precast white reflect curb				
type A	lf	840	3.25	2.25
type C	lf	360	3.25	3.15
Gravel bkfill, fndn	cy	130	2.50	3.70
drains	cy	250	3.00	4.50
Concrete, class A	cy	436	55.00	62.00
class C	cy	2	55.00	62.00
Steel reinf bars	lb	4,3720	0.15	0.16
Removing junction boxes	ea	3	25.00	25.00
cmt conc pavement	sy	500	1.00	1.20
oiled surf	sy	660	0.50	0.30
Reflector units	ea	4	10.00	15.00
Bit ctd corr met culv pipe				
no. 16 gage, 8"	lf	90	2.50	3.00
Conc or VC drain pipe, 8"	lf	400	1.00	1.00
12"	lf	33	1.50	2.00
Plain conc or VCsewer pipe, 8"	lf	4,552	0.90	1.25
12"	lf	3,867	1.40	1.85
Std reinf conc culv pipe, 18"	lf	2,970	3.50	3.95
Pain corr met culv pipe,				
no 14 gage, 24"	lf	66	4.50	6.00
54"	lf	112	18.00	20.00
60"	lf	98	25.00	27.00
Catch basins	ea	13	100.00	185.00
Manhole	ea	1	250.00	250.00
Reinf conc spot posts	ea	33	14.00	11.00
right of way markers	ea	77	5.00	6.00
Monument cases and covers	ea	38	25.00	45.00
Special loose riprap	cy	10,180	2.00	2.90
in place from stockpile	cy	350	1.25	2.00
Hand placed riprap	cy	3	25.00	25.00
Remov & replac water, sewer and irrigation	force act	est.	$5,000	$5,000

Overhead structure, Utah

A concrete and steel overhaul structure and approaches for the State Road Commission of Utah drew a bid 13% below the engineer's estimate. The 0.136-mile project is at Echo Canyon on U. S. 189 and U. S. 30-S. Type SC-3 bituminous material on crushed rock or gravel base will be used for the approaches.

E. G. Johnson is chief highway engineer; O. Donald Miles, the chief draftsman.

Minimum hourly wages for the project are: asphalt plant engineer, $2.15; cement finisher, $2.05; roller operator, $2.15; reinforcing steel setter, $2.25; asphalt plant fireman, $1.775; concrete mixer, $1.90; finishing machine pipe layer, $1.625; and common laborer, $1.50.

The project must be complete in 200 working days. Bidders include:

1C	Hilton & Carr Const. Co., Ogden, Utah	$334,611
2	Young & Smith Contr. Co., Salt Lake City	343,211
4	Gibbons & Reed Co., Salt Lake City	421,637

Bids: 5-6-52 Items	Unit	Quantity	Unit Prices 1C	 2
Approaches				
Bit material, SC-3	gal	7,000	$0.17	$0.20
Cr. rk or cr grav surf crse	cy	1,700	0.75	1.00
Scarifying and mixing	mi	0.399	$1,800	$1,000
Exc, unclassified	cy	38,000	$0.40	$1.00
Overhaul, class A	stay	239,000	0.03	0.02
class B	yd mi	7,000	0.15	0.20
Watering	M gal	700	3.00	1.50
Rolling	hr	500	10.00	7.00
Exc, channel	cy	3,540	0.75	1.00
for structures	cy	540	3.00	4.00
C.G.M. pipe, 18"	lf	124	3.40	4.00
Concrete, class A	cy	437	50.00	60.00
Reinf steel, mesh	lb	28,200	0.13	0.20
Furn water equipment	ls	1	$500	$1,000
construction signs	ls	1	300	1,000
Overhead Structure				
Exc, for structures	cy	1,700	$2.00	$4.00
Concrete, class A	cy	1,213	71.00	65.00
Reinf steel	lb	131,700	0.15	0.13
Structural steel	lb	826,000	0.155	0.15
Piles treated	lf	7,650	2.25	2.40
Steel handrail	lf	875	15.00	5.00
Test piles	lf	105	10.00	5.00
Furn pile driving equip	ls	1	$1,200	$1,000

CONSTRUCTION REPORTS

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
August 12, Massachusetts
STREETS AND ROADS
July 29, Massachusetts

Mass., Boston—B.A. 7/31—State, Metropolitan Dist. Comn., Constr. Div., 20 Somerset St., Contr. 162 A, constr. Shaft 8,390 ft. deep, 14 ft. diam. and tunnel either side, $360,000; Contr. 162 B, constr. Shaft 9,440 ft. deep, 24 ft. diam. and tunnel either side, Boston and Somerville, $550,000. Plans deposit $10 each. CD 5/12/44.

BIDS ASKED—BUILDINGS

Conn., Salisbury—SCHOOL—B.A. 8/14—Town, Bd. Educ., elementary school addn. $600,000. Elliott Noyes, 85 Main St., New Canaan, Conn., archt. Perkins & Will, 309 Jackson Blvd., Chicago 6, Ill., assoc. archts. CD 8/8/51.

SOON LETS CONTRACT—BUILDINGS

N. H., Manchester—STORE—Walnut Investment Co. Inc., Manchester, soon lets contract department store, Prospect and Elm Sts. $500,000. CD 7/11.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **S. Volpe & Co., Inc.**, 185 Devonshire St., Boston, Mass. CA. **$3,317,983**, est. $2,850,000. 259 HOUSING units, Wood Estate Norton St., Proj. 200-10, Dorchester, BOSTON, MASS. Boston Housing Auth., 230 Congress St., Boston, Mass. Bids June 27. CD 6/23.

▲ **Hotel Statler Co., Inc.**, 7 Ave. and 33 St., New York, N. Y., rejected bids July 1, 455-room rein.-con. or structural frame HOTEL, HARTFORD, CONN. CD 6/12.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
July 29, Maryland July 30, Delaware
August 7, New York August 8, Pennsylvania
STREETS AND ROADS
July 29, Maryland July 30, Delaware
August 5, New Jersey August 7, New York
August 8, Pennsylvania

BIDS ASKED—BUILDINGS

▲ **N. J., Princeton**—SHOPPING CENTER—B.A. in July-Clearview Assocs., 145 Harrison St., general contract shopping center, etc., $3,600,000 Severud, Elstad, Krueger, Ketchum, Gina & Sharp 227 E. 44 St., New York, N. Y., archts. CD 7/6/50.

Del., Wilmington—SCHOOL—B.A. 7/30—Wilmington Bd. Educ., 511 W. 8 St., Wilmington, Dr. Charles R. Drew Elementary School, $707,644. Victorine & Samuel Homsey, 917 Gilpin Ave., archts. CD 2/14, under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **H. R. H. Constr. Co.**, 9 E. 40 St., New York 17, N. Y. LB. **$4,293,000**, general contract;

Heating Maintenance Corp. of New York, 220 E. 138 St., New York 51, N. Y., LB. **$642,860**, heating and ventilating;

Bank Electrical Co., 126 W. 32 St., New York 1, N. Y. LB. **$309,500**, electrical work;

Lipsky & Rosenthal, Inc., Lexington Ave. and 115 St., New York 29, N. Y. LB. **$489,667**, plumbing for South Jamaica HOUSES II (Proj. NY-5-18) in area bounded generally by 158 St., 109 Ave., 159 St., 108 Ave., 107 Ave., 159 St., 158 St., South Rd., 160 St. and Brinkerhoff Ave., JAMAICA, N. Y. New York City Housing Auth., 63 Park Row, New York 7, N. Y. Bids July 15.

▲ **Gerace & Castagna, Inc.**, 155-10 Jamaica Ave., Jamaica, N. Y. CA. **$11,615,143**, general constr.;

Astrove Plumbing & Heating Corp., 213 E. 27 St., New York 16, N. Y., CA. **$1,555,240**, plumbing;

Raisler Corp., 129 Amsterdam Ave., New York 23, N. Y. CA **$1,505,920**, heating;

Fischbach & Moore, Inc., 226 E. 41 St., New York 17, N. Y. CA. **$1,744,800**, electrical work for construction of General HOSPITAL and Superintendents' HOUSES and GARAGES at Pelham Parkway, South and Eastchester Rd., Bronx Boro, NEW YORK, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Grand total $16,421,103. Bids May 28. CD 6/6, under LB.

▲ **H. R. H. Constr. Co.**, 9 E. 40 St., New York 17, N. Y. CA. **$3,762,000**, general contract;

Far Plumbing Co., 2018 Crotona Parkway, New York 60, N. Y., CA. **$514,555**, plumbing for Highbridge HOUSES, Proj. NY 5-26 in area bounded generally by Major Deegan Blvd. (Sedgewick Ave.) W. 167 St., University Ave. and line approx. 135 ft. north of W. 165 St., Bronx Boro, NEW YORK, N. Y. New York City Housing Auth., 63 Park Row, New York 38, N. Y. Bids June 4. CD 6/12, under LB.

▲ **Corbetta Constr. Co.**, 220 E. 42 St., New York 17, N. Y. CA. **$4,512,608**, general contract.

Arc Electrical Constr. Co., Inc., 739 Second Ave., New York 16, N. Y. CA. **$354,400**, electrical work;

J. L. Murphy, Inc., 340 E. 44 St., New York 17, N. Y., CA. **$494,230**, plumbing for Stephen Foster HOUSES, Proj. NYS 30, Sect. II, incl. Bldgs. 6 to 10 (inclusive) in area bounded generally by W. 112 St., 5 Ave., W. 113 St., Lenox Ave. and generally by an area in their westerly portion of the block bounded by W. 113 St., 5 Ave., W. 114 St., Lenox Ave. NEW YORK, N.Y. New York City Housing Auth., 63 Park Row, New York 38, N. Y. Grand total $5,361,238. Bids June 27. CD 5/26.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 North Office Bldg., Harrisburg,

Larry Constr. Co., 137 Jefferson St., Pittsburgh 28, Pa., LB **$360,547**, 6,024 ft. plain c. conc. base with bit. surf. T. R. 22, 30, 80, Allegheny Co.;

Frank Mashuda Co., Gibsonia, Pa., LB **$3,458,935**, est. $3,500,000 5.2 mi. con pavement 24 ft. wide on each side of divisor, approaches both sides Belle Vernon Bridge over Monongahela River, Washington and Westmoreland Counties; LB **$2,063,395**, construct 16,294 ft. crushed aggregate base with bit. surf., two I-beam and I-deck plate bridge, L. R. 246, Spur (11), Allegheny Co.

C. W. Good, Inc., 726 Columbia Ave., Lancaster, Pa., LB **$504,819**, replacing 14,222 ft. trolley track area with conc. pavement and construct conc. pavement, variable in width, TR. 222, Berks Co.;

John Meehan & Son, 916 W. Dakota St., Phila. 33, Pa., LB **$295,426**. widen 18,765 ft. pavement with plain c. conc. base and bit. surf. new base and existing pavement, Delaware Co.;

Brown, Davis & White, Box 203, Lebanon, Pa., LB **$278,895**, widen 22,360 ft. pavement with plain c. conc. base or crushed aggregate and widen new and existing pavement with bit. surf. T. R. 446, McKean Co.;

Mack Paving & Constr. Co., Luzerne and "C" St., Phila., 24, Pa., LB **$956,896**, construct 8,306 ft. divided highway with crushed aggregate base and bit. surf., 33 ft. wide on each side of divisor and a concrete deck I-beam bridge, Aramingo Ave. L. R. 67047 (1), Phila. Co.;

Ray E. Furman, 54 Church St., Waynesburg, Pa., LB **$99,945** widen 17,262 ft. existing road with crushed aggregate base and bit. surf. and replacing portions of existing pavement, rein.-conc. bridge, T. R. 219, Somerset Co.;

Tri-State Asphalt Corp., Martins Ferry, O., LB **$417,669**, const. 17,797 ft. crushed aggregate base with bit. surf., widen and overlay of existing pavement, 2 rein.-conc. bridges, T. R. 219, Somerset Co. Bids July 11. CD 6/10.

▲ **Stamato & Cestone**, 28 Main St., Lodi, N. J., CA **$543,044**. Cont. 2, sewers; CA **$889,949**, Cont. 1, sewers; CA **$583,738**, Cont. 3, sewers;

Dravo Corp., Neville Island, Pittsburgh, Pa., CA **$159,430**, Cont. 5, mechanical work in connection with sewage treatment work;

Carl L. Furner, Inc., 96 Kendall Blvd., Oaklyn, N. J. CA **$582,508**, Cont. 4, sewage treatment works, MORRISVILLE, PA. Municipal Auth of Morrisville Boro, Boro Hall, Washington and Chambers Sts., Morrisville, Pa. Grand total $2,758,669. Bids June 6. CD 6/19, 6/20 under LB.

▲ **Stofflet & Tillotson**, 2043 Eastburn Ave., Phila., Pa., LB **$1,348,088**. sewage treatment plant, grading, road constr. and walks, NORWOOD, PA. Muckinipates Auth., Sharon Hill, Pa. Damon & Foster, Sharon Hill, Pa., assoc. engr. Phillip Streauder, Sharon Hill, Pa., engr. CD 3/30/50.

▲† **Ajax Constr. Co., Inc. & Assocs.**, 925 15 St. N. W., Wash., D. C., LB, **$5,842,640**, 23 airmen's dormitories and 4 mess administration bldgs., Bids July 8, CD 6/2;

Green Constr. Co., 274 Madison Ave., New York, N. Y., LB, **$1,328,440**, base supply warehouse and air freight terminal, Dover Air Force Base, DOVER, DEL. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids July 2. CD 5/1.

BUILDINGS

LOW BIDS AND CONTRACTS

Windsor Ranch Homes, c/o John Burton, archt., 163-18 Jamaica Ave., Jamaica, N. Y. Owner Builds. **$500,000**. 54 HOUSES on tract, Springfield Blvd. and 69 Ave., BAYSIDE, N. Y.

▲ **Michael Contg. Co.**, 142 Nineteenth St., Brooklyn 22, N. Y. CA. Approx. **$1,500,000**. 2 story, 277x638 ft. WAREHOUSE, Brinkerhoff Ave. between 178 and 180 Sts., JAMAICA, N. Y. Miles A. Gordon, 624 Madison Ave., New York, N. Y. archt.

Frank Mascali & Sons, 120 St. and 31 Ave., Flushing, N. Y. CA. **$728,240**, street and yard imprvs., for Edenwald HOUSES, Proj. NY 5-19 in area bounded generally by Laconia Ave., Grenada Pl., Baychester and Schieffelin Aves., E. 225 St., Bronx Boro, NEW YORK, N. Y. New York City Housing Auth., 63 Park Row, New York 38, N. Y. Bids May 27. CD 6/12, under LB.

Preston Estates Homes, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. Approx. **$800,000**. 75 HOMES on tract on N. Jerusalem Ave. west of Merrick Ave., NORTH MERRICK, N. Y.

▲ **Sherwood Homes**, c/o Matern & York, archts., 90-04 161 St., Jamaica, N. Y. Owner Builds. **$1,000,000**. 80 HOUSES, Ellison Ave., south of Northern State Parkway, WESTBURY, N. Y.

▲ **Bentley Bros. Constr. Co.**, 5 E. Woodland Ave., Springfield, Pa., CA. **$3,170,000**. RESIDENTIAL DEVELOPMENT, Concord and Bridgewaters Rds., CHESTER, PA. Concord Development Co., 5 E. Woodland Ave., Springfield, Pa.

▲ **Douglass-Mendenhall Constr. Co.**, 4684 State Rd., Drexel Hill, Pa., CA. Approx. **$2,398,000**. RESIDENTIAL DEVELOPMENT, Meadowbrook Manor, EXTON, PA. Ridgeburn Corp., 2409 N. Broad St., Phila., Pa.

Arters Bros., Lima, Pa., Separate Contracts. **$784,000**. RESIDENTIAL DEVELOPMENT, Rose Tree Rd., MEDIA, PA. George Hay, Lima, Pa., archt.

▲ **Wark & Co.**, 1920 Sansom St., Phila., Pa., LB **$1,687,000**. HOSPITAL and roadways, Mercy-Douglas Hospital, PHILA., PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. William H. Gravell & Assoc., 2031 Chestnut St., Phila., Pa., engrs. Bids July 8. CD 6/13.

▲ **Turner Constr. Co.**, 1500 Walnut St., Phila., Pa., CA. Approx. **$7,000,000**. newspaper publishing PLANT, PHILA., PA. The Evening Bulletin, Filbert and Juniper Sts., Phila., Pa. George Howl & Robert Montgomery Brown, 1728 Spruce St., Phila., Pa., archts. William Ginsberg Associates, 331 Madison Ave., New York, N. Y., consult. engrs. William & Gravell, 1700 Walnut St., Phila., Pa., structural engrs. CD 8/17/51.

▲ **LaMor Constr. Co.**, Western Saving Fund Bldg., Phila., Pa., Separate Contracts. Approx. **$7,000,000**. RESIDENTIAL DEVELOPMENT, Germantown Pike, PLYMOUTH MEETING, PA. Henry A. Berg, 1411 Walnut St., Phila., Pa., archt.

Eskay Hill Constr. Co., Royersford, Pa., CA. **$750,000**. RESIDENTIAL DEVELOPMENT, Oak St., 7th Ave.,

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PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects invloved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

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WORK

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- CAISSONS
- UNDERPINNING
- SHEETING & BRACING
- PILING & SHEETING
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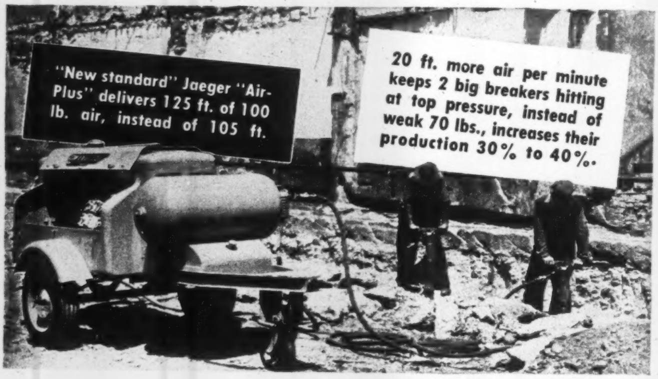
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etc. ROYERSFORD, PA. Orchard Terrace, Inc., Royersford, Pa.

Curtis Building Co., Mt. Carmel Ave., North Hills, Pa. Separate Contracts. **$600,000.** RESIDENTIAL DEVELOPMENT, Groviarna Ave., WILLOW GROVE, PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

▲ **Eagle Constr. Co.**, 69 Park Place, Newark, N. J. LB **$3,333,334.** construct, manage, finance HOUSING Project Title 8, INDIAN HEAD, MD. Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Milton J. Prassas, Inc., 1737 Harvard St. N.W., Wash., D.C., archt. Bids July 9 CD 6/27.

Ernest Di Sabatino, 2601 W. 4 St., Wilmington, Del., LB **$560,000**, Manor Park Elementary SCHOOL, NEW CASTLE, DEL. New Castle Special School Dist., New Castle, Del. Bids July 9. CD 7/24.

▲ **Anthony P. Miller, Inc.**, 3333 Arctic Ave., Atlantic City, N. J., CA, **$1,706,000**, Southbridge HOUSING DEVELOPMENT addn. and site work, WILMINGTON, DEL. Wilmington Housing Auth., 1302 Thatcher St., Wilmington, Del. Bids June 5. CD 6/20, under LB.

▲ **Marsh Road Homes, Inc.**, Farnhurst, Del., Separate Contracts, **$1,400,000**, RESIDENTIAL DEVELOPMENT, Lynnfield Section, WILMINGTON, DEL.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

July 29, North Carolina

STREETS AND ROADS

July 29, North Carolina
August 1, Kentucky

BIDS ASKED—BUILDINGS

Va., Staunton—HIGH SCHOOL—B.A. 8/1—Staunton School Bd., Staunton, 2 and 3 story brick, concrete masonry, rein.-con. of steel frame alt. Wilson High School addn. $750,000. T. J. Collins & Son, Staunton, Va., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Norfolk & Western Ry.**, A. B. Stone, ch. engr., Roanoke, 17, Va. Own Forces, enlarging Bluefield yards, incl. wid'n., extending tracks, relocation road, siding and yard office;
Acme Constr. Co., Berkeley, W. Va., CA, grading, piping, masonry work, BLUEFIELD, W. VA. Est. **$2,000,000.** CD 6/12.

Service Electric Co., 608 Holtzclaw Ave., Chattanooga, Tenn., LB. **$705,025**, Pinewood Sub-station;
Roy Richards, Carrollton, Ga., LB. **$343,535**, Batesburg Sub-station;
Sumter Builders, Sumter, S. C., LB. **$143,658**, Camden Sub-station; LB. **$146,724**, Darlington Sub-station. SOUTH CAROLINA. Central Electric Co-operative, 29 Cornell Arms Bldg., Columbia, S. C. Bids July 8. CD 6/27.

▲† **R. H. Wright & Son, Inc.**, 1058 N. E. Fifth Terrace, Fort Lauderdale, Fla., LB, **$1,751,000**, plane parking apron, LTA mooring facilities, taxiway and taxiway lighting facilities, NOY 71516, Bids July 9, CD 6/9.;
Fred Howland, Inc., 1451 N. W. 20 St., Miami, Fla., LB, **$614,697**, public works shop, transportation bldg. cold and dry storage bldg., Naval Air Station Boca Chica Field, NOY 71517 KEY WEST, FLA. Dpt. Navy, Officer in Charge of Construction, Box 465 Naval Base, S. C. Bids July 9. CD 6/11.

▲† **Fairbanks Morse & Co.**, 49 Central St., Cincinnati, O. CA. **$1,105,124.** Contr. A and B pumps for Beargrass Creek Pumping Station, KENTUCKY. U. S. Eng., 830 W. Broadway, Louisville 3, Ky. Awarded June 30. (**CORRECTION**—contractor). CD 7/10, under CA.

▲ **Traylor Bros., Inc.**, Upper Mt. Vernon Rd., Evansville, Ind. CA. Est. **$2,000,000.** Rail River TERMINAL and WAREHOUSE, LOUISVILLE, KY. City and Port of Louisville Terminal, Inc., City Hall, Louisville, Ky. Awarded June 15.

TENNESSEE—State Hy. Dpt., Nashville,
Marion Constr. Co., Craighead Ave., Nashville, Tenn., CA. **$897,240,** construct substructure of Victory Memorial Bridge across Cumberland River at Main St. in Nashville, incl. retaining walls and frontage streets, 0.651 mi. from Public Square and extending to intersection of Main and Third Sts., Proj. No. U-068-1-(1), Davidson Co. Bids June 20. CD 6/26, under LB.

▲† **Pittsburgh-Des Moines Steel Co.**, Neville Island, P.O. Pittsburgh, Pa., CA. **$2,448,780,** 16x16 ft. transonic flexible nozzle for propulsion wind tunnel, Arnold Engineering Development Center, TULLAHOMA, TENN. U. S. Eng., Tullahoma, Tenn. CD 6/11, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

† **Virginia Eng. Co., Inc.**, 80 29th St., Newport News, Va., LB **$976,470**, 1 and 2 story structural steel frame, concrete masonry, precast concrete or gypsum plant roof ORDNANCE FACILITIES and RAIL WAREHOUSE, FORT EUSTIS, VA. U. S. Eng., Foot of Front St., Norfolk, Va., Bids July 10. CD 6/26.

John P. Pettyjohn, 218 8th St., Lynchburg, Va., CA **$800,000.** 4 story rein.-con. frame, brick, concrete

Continued on page 96

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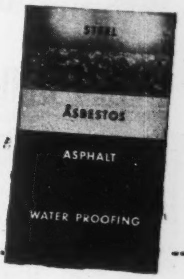

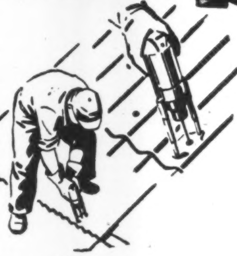

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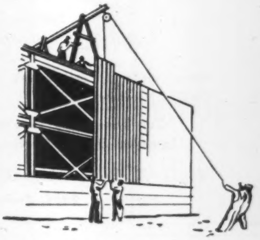
The Top-Speed Fastening method is done entirely from the outside. It eliminates interior hanging scaffolds. Consequently, this enables a workman to place, safely, twice as much material in the same time as with the old method.



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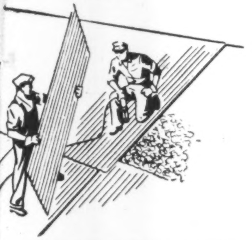
Famous Robertson Q-Panels can be surfaced with Galbestos. A Galbestos metal Q-Panel is factory-fabricated; steel inside, insulation and Galbestos outside. Available 2′ wide, in lengths up to 12′, lightweight, only 3¼″ thick, but superior in insulation value to a 12″ masonry wall with furred plaster. A small crew can erect a Q-Panel fast—50 sq. ft. in nine minutes.



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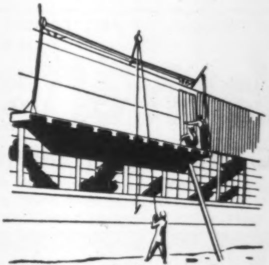

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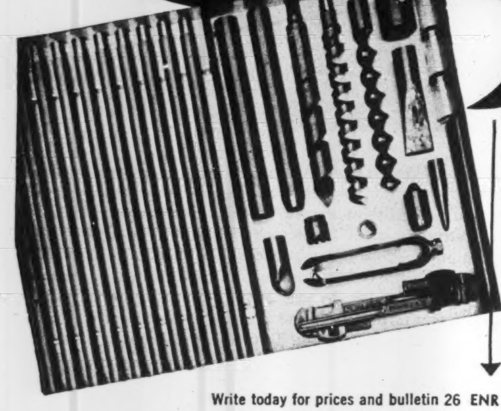

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Continued from page 94

masonry men's DORMITORY, HAMPTON, VA. Hampton Institute, Hampton, Va. CD 6/27.

English Constr. Co., Altavista, Va., CA. **$701,625**, 2 story brick, concrete, masonry Fort Lee SCHOOL, FORT LEE, VA. Prince George Co. School Bd., Prince George, Va. CD 7/1, under LB.

Thorington Constr. Co. Inc., 2106 N. Hamilton St., Richmond, Va., CA. **$863,138**, DORMITORY, WILLIAMSBURG, VA. College of William & Mary, Williamsburg, Va. Bids July 8. CD 7/17, under LB.

▲ **Daniel Constr. Co.**, 429 Main St., Greenville, S. C. CA. Approx. **$1,500,000.** PLANT addn., BELTON, S. C. Textron Southern, Inc., Belton, S. C.

▲ **Lee Norman & Arnoult**, 434 Jefferson Hy., New Orleans, La. Owner Builds. Est. **$1,000,000.** 84 RESIDENCES, HARAHAN, LA.

Gentilly Homes, 4210 Press Dr., New Orleans, La. Owner Builds. Est. **$875,000.** 107 RESIDENCES, NEW ORLEANS, LA.

Caldwell & McCann, P.O. Box 477, Baton Rouge, La. CA. **$794,800.** AGRICULTURE-SCIENCE BLDG., Southern University, SCOTLANDVILLE, LA. State Bd. Educ., Capitol Bldg., Baton Rouge, La. CD 6/25, under LB.

John C. Clark, Jr., 390 Grand Ave., Memphis, Tenn. Owner Builds. **$800,000.** 80 RESIDENCES, 2nd Addn. to Hillsdale Sub-division, MEMPHIS, TENN.

Stanley Trezevant & Leon Bell, 1055 Colonial Rd., Memphis, Tenn. Owner Builds. Approx. **$750,000.** 75 RESIDENCES, MEMPHIS, TENN.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

July 30, Michigan
August 5, Wisconsin

STREETS AND ROADS

July 29, Indiana
July 30, Michigan
August 5, Wisconsin

BIDS ASKED—BUILDINGS

O., Cleveland—GARAGE—B.A. 8/1—Cleveland Transit Sys., 1404 E. 9 St., Zone 14, 1 story, brick, stone bus garage, 100 bus capacity at Windemere Station on Hayden Ave., East Cleveland. $750,000. Plans deposit $10. A. N. Rabori of DeLeuw, Cather & Co., 150 N. Wacker St., Chicago, Ill., engr. and archt. CD 2/27/47.

▲ **O., Dayton**—FACTORY, etc.—B.A. About 8/1—Dayton Coca Cola Bottling Co., 346 Xenia Ave., 1 and 2 story, 115,000 sq. ft. concrete, steel, red brick factory, bottling plant, offices, garage, etc. corner Ludlow and Rayard Sts. $1,000,000. Schenck & Williams, Third Natl. Bldg., archts.

Mich., Wyandotte—SCHOOL—B.A. 8/4—City, 2 story, bsmnt., brick, steel, James L. Madison Elementary School, Grove and 20 Sts., $500,000. Plans deposit $25 refundable. Hahr-Anderson Associates, Inc., 15011 Michigan Ave., Dearborn, archt.

▲ **Mich., Romulus**—FACTORY—B.A. 8/5—Ford Motor Co., 3000 Schaefer St., Dearborn, 970,000 sq. ft. 2 factory units, 2 story, 185,000 sq. ft. office, on 157 acres land, $25,000,000. Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, engr. and archt. CD 5/20.

▲ **Wis., Platteville**—LIBRARY, etc.—B.A. 8/15—Bd. Regents of State Colleges, Madison, 1 and 2 story, part bsmnt., library and training school. $1,300,000. Plans deposit $25. Boyum, Schubert & Sorenson, La Crosse, engrs. CD 7/25/51.

SOON LETS CONTRACT—BUILDINGS

▲ **Ind., Fort Wayne**—DEPARTMENT STORE—Sears, Roebuck & Co., S. Homan and W. Arthington Sts., Chicago, Ill., soon lets contract—department store with parking area and service station, **$2,230,000.** Carr & Wright, 333 N. Michigan St., Chicago 1, Ill. archts. CD 10/11/50.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Curro Constr. Co.**, Union Commerce Bldg., Cleveland 14, O., CA. **$265,611**, est. $270,000. storm sewer Puritan Rd. from Rocky River Dr. west to point near Grayton Rd.;

National Constr. Co., 23500 Lakeland Blvd., Euclid, O. CA. **$84,993**, est. $85,000. storm sewer in W. 128 St. from Triskett Rd. south to Lorain Ave. CD 12/13/43;

Hunkin-Conkey Constr. Co., 1740 E. 12 St., Cleveland 14, O., CA. **$2,127,060**. est. $2,300,000. expansion and modernization of Southerly Sewage Disposal Plant, incl. pre-settling tanks, pump bldg., etc. at Cuyahoga Heights. CLEVELAND, O. City, City Hall, Cleveland, Zone 14. Grand total $2,477,664. CD 3/14.

▲ **Santucci Constr. Co.**, 5044 Carol Ave., Skokie, Ill., LB. **$1,760,400**, Upper Des Plaines Intercepting Sewer, Mt. Prospect and Twps. of Elk Grove, Maine and Wheeling, CHICAGO, ILL. Sanitary District of Chicago, 910 S. Michigan St., Chicago, 5, Ill. Bids July 7.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Engineering Constr. Corp.**, 173 W. Madison St., Chicago, 3, Ill., LB. **$1,479,714.** gunners mate service SCHOOL, water lines, storm and sanitary sewer, training station, GREAT LAKES, ILL. Ninth Naval Dist. Great Lakes Naval Training Station, Great Lakes, Ill. CD 12/28.

▲ **Owner,** c/o R. L. Brandt & Max Fuhrer, archts., 120 S. La Salle St., Chicago, Zone 3, Ill., Owner Builds, **$1,000,000,** 50 RESIDENCES, McDaniel and Bob-O-Link Rds., HIGHLAND PARK, ILL.

▲ **Community Builders, Inc.,** 4101 Dempster St., Skokie, Ill., Owner Builds, **$1,000,000,** 60 HOMES, PALATINE, ILL.

▲ **American Community Builders, Inc.,** 111 W. Monroe St., Chicago 3, Ill., Owner Builds **$30,000,000,** 1720 HOMES, PARK FOREST, ILL. Awarded July 1.

Edward H. Meyer Constr. Co., Neenah, Wis., CA, **$750,000.** 70,000 sq. ft. FACTORY, MARINETTE, WIS. Marinette Paper Co., 3120 Riverside Ave., Marinette, Wis. Awarded July 7. CD 4/2.

R. E. Dailey Co., 9900 Northlawn St., Detroit, Mich. CA. **$585,000,** est. $400,000. 2 story, brick, steel Frederick Schulze Elementary SCHOOL, 17400 Manor St., DETROIT, MICH. City, Bd. Educ., Broadway, Detroit, Mich. Bids May 14. CD 5/9.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

July 29, Iowa
July 31, August 1, Kansas
August 1, Missouri

STREETS AND ROADS

July 31, August 1, Kansas
August 1, Minnesota, Missouri

BIDS ASKED—BUILDINGS

▲ **Tex., Lubbock**—HOUSING—B.A. 8/12—U. S. Eng., Box 1538, Albuqueque, N. M., construct, manage, finance, 418 unit Wherry Housing, $3,762,000. Plans deposit $50; water sys. $60,000; sanitary sewers, $65,000; street constr. and paving, $90,000; natural gas distr. sys., $60,000; outside electrical distr. sys. $65.000 at Reese Air Force Base. CD 7/10.

▲† **Mo., Kansas City**—SUPPLY and RECORDS BLDG.—B.A. About 8/15—General Services Admin., W. A. Hollway, reg. dir., Federal Office Bldg., 907 Walnut St., Kansas City, Mo., 530,000 sq. ft. federal supply and records bldg. $4,400,000. CD 11/7/45.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **U. S. Eng.,** 601 Davidson Bldg., Kansas City 8, Mo. rejected bids July 8, runways, taxiways, aprons Sedalia Air Force Base, Inv. 52-74, SEDALIA, MO. LB **$3,466,586.** CD 1/22/52.

▲† **Lipsett, Inc.,** 100 Park Ave., New York, N. Y. CA **$1,657,745,** construct footings and erecting steel towers for 230-kilovolt transmission line which will carry Missouri River Basin Reclamation Proj. power from Fort Randall Dam, SOUTH DAKOTA to Sioux City, IOWA. Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Bids June 25. CD 7/3.

▲† **General Electric Co.,** River Rd., Schenectady, N. Y. LB **$3,230,136,** generators for Gavins Point Reservoir Proj. Inv. 52-131, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids July 9. CD 6/4.

† **L. R. Foy Constr. Co.,** Hutchinson, Kan. LB **$701,492.** Rehabilitation, of buildings Hutchinson Naval Air Force Station, HUTCHINSON, KAN. Ninth Naval Dist., Great Lakes, Ill. Bids June 25. CD 6/10.

▲ **Brown & Root, Inc.,** Box 3, Houston, Tex., CA. **$801,352.** Auxiliary field at Bryan Air Force Base, area incl. lighting, hangar, roads, runways, etc., Inv. No. ENG 41-243-52-107, near Hearne, BRYAN, TEX. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. Bids June 27, awarded July 11. CD 5/28, under Tex., Hearne.

▲† **J. J. Fritch,** 6834 Harry Hines Blvd., Dallas, Tex. CA. **$1,633,996.** 8 dormitories, mess and admin. bldgs. Inv. No. Eng 34-066-52-77, ALTUS, OKLA. U. S. Eng., Box 61, Tulsa 2, Okla. Bids June 25, awarded July 10. (**Correction**—contractor). CD 7/8, under CA.

▲ **Heldenfels Bros.,** P.O. Box 1917, Corpus Christi, Tex., CA. **$2,225,000,** causeway, linking Padre Island with Port Isabel, PORT ISABEL, TEX. Cameron Co., Court House, Brownsville, Tex. Bids May 12, awarded July 15. CD 5/19, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Praver & Son,** 107 St. and Blue Ridge, Kansas City, Mo. Owner Builds. Est. **$25,000,000.** 1,600 single family HOUSING units, 400 DUPLEXES at Ruskin Heights, KANSAS CITY, MO. Louis Geis, 4550 Main St., Kansas City, Mo., archt.

G. L. Tarlton Contg. Co., 5505 Dale Ave., St. Louis 10, Mo. LB **$798,077.** general contract 6 story, ground floor, penthouse, 44x158 ft., brick, rein.-con. Renard HOSPITAL, adjacent to Audubon and Euclid Aves., ST. LOUIS, MO. Washington University School of Medicine. Office of Dean, 660 S. Kingshighway, St. Louis 10, Mo.

† **McKenzie Constr. Co.,** Box 806, San Antonio, Tex., CA **$645,002,** SUPPORTING FACILITIES for fourteen 225-man barracks, Inv. No. Eng 41-443-52-49, FORT HOOD, TEX. U. S. Eng., 100 W. Vickery St., Fort Worth, Tex. CD 6/25, under LB.

▲ **Whipple Constr. Co.,** 2456 Bissonnet St., Houston, Tex. Owner Builds. **$585,000.** Job 2, 30 one and

Continued on page 99

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PERFORATED DRAGLINE BUCKET

speeds the wet jobs

● You get big loads fast with this Wellman Perforated Dragline Bucket because excess water goes out while gravel stays in on jobs such as illustrated.

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It will pay you to investigate the advantages of the Franki Displacement Caisson. It has been used successfully in 36 countries under a wide variety of soil conditions. Typically, single caisson loads are 100 tons.

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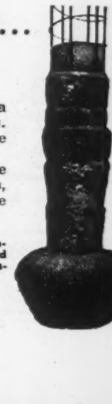

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Tractor and Level Whip Texas Mud Flats

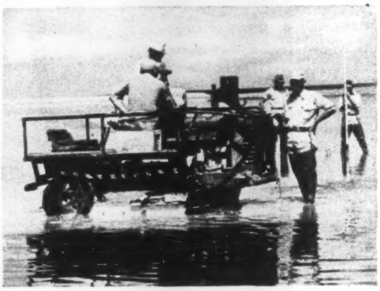
"Recently we had a job which, at first, seemed routine – locating exterior boundaries of a Texas ranch," writes G. W. Herzog, Chief, Drafting-Surveying Division, Shell Oil Company. "Although the original Mexican grant placed the eastern boundary on shores of a lagoon and tides were involved, we anticipated no real difficulty.

"Inspecting the coast line, however, revealed several hundred acres of accreted land. Our problem soon became one of locating a line across mud flats. The land had to be contoured–accurately and quickly. A close grid pattern seemed logical.

"We soon found we had misjudged the work. Our closed transit traverse was over 25 miles and some parts of the flats were over three miles across. Worst of all, by the time field work began, hard winds had covered the flats with water.

"Using temporary bench marks of pine, we ran a base line. Where bench marks were any distance at all from the shore, the flats were soft and slippery. Instruments couldn't be kept level on a standard tripod. And with so many setups, platform building at each point was out of the question.

On tractor, one man keeps instrument level while other is taking the rod readings.



Surveying Texas mud flats, Shell Oil Company party uses tractor with platform built for level.

"A light caterpillar tractor was then suggested as a surveying aid. We widened its treads to 26 inches, and a platform for the instrument man was built to the width of the treads and slightly longer. A metal frame, clearing the motor, was welded to the platform; a base of plywood fastened to the frame; and a shortened tripod bolted to the plywood.

"This procedure proved best: tractor was placed with longitudinal axis at right angles to, and a few feet from, the line–and about 1500 feet from the turning point. While one man kept the instrument level, a second took readings. When rod passed tractor, the men changed jobs to prevent any rocking motion.

"We completed the work in one-fifth the time required by conventional methods. Again, surveyors overcame Mother Nature."

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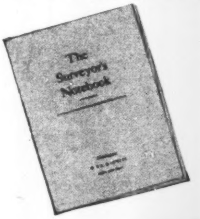

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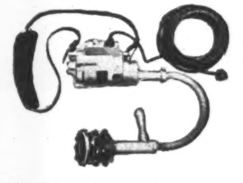

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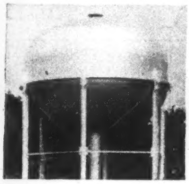

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Continued from page 97

two story masonry frame Dwellings; **$438,000**, Job 3, 23 masonry, stone trim dwellings, air-conditioning, HOUSTON, TEX. CD 6/4.

▲ **Whitney Chain Co.**, 237 Hamilton St., Hartford, Conn. abandoned project, site sold, chain mfg. PLANT, LONGVIEW, TEX. CD 7/26/51, under CA.

Gerald S. Gordon & Assoc., Stewart Bldg., Houston, Tex. Purchase and Hire. Approx. **$525,000**. 75 DWELLINGS, PASADENA, TEX. CD 5/14.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
August 6, California
STREETS AND ROADS
August 6, 7, California

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **IDAHO**—Bureau P. Rds. Dpt. Commerce, 609½ Bannock St., Boise,

J. S. Anderson & H. C. Grendahl, Hutton Bldg., Spokane, Wash., LB, **$585,705**, grubbing, grading, draining 6.936 mi. McCall-Stibnite Hy. Proj. 48-B, Unit 2;

Quinn Bros. & Robbins, 703 S. 16 St., Boise, Idaho, LB, **$252,932**, grading, surf. bit. 1.325 mi. North Fork Payette Hy. Proj. 23-All, Valley Co. Bids July 8. CD 6/24.

▲† **American Bridge Div., U. S. Steel**, 1331 3 Ave., Seattle, Wash., CA, **$147,083**, structural steel for hangar, SEATTLE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle, Wash. Bids July 2. CD 7/11, under LB.

† **U. S. Eng.**, City-County Airport, Walla Walla, Wash., rejected bids June 18 paving apron at Fairchild Air Force Base, LB. **$995,847**. SPOKANE, WASH. Project cancelled. CD 6/25, under LB.

Lee Hoffman, 535 Water St., Portland, Ore., LB **$735,320**. sewage treatment plant, EUGENE, ORE. City, City Hall, Eugene, Ore. Bids July 10. CD 6/4.

† **Stolte, Inc. & Morrison-Knudsen Co., Inc.**, 8451 San Leandro St., Oakland, Calif., LB, **$916,874**, brigade area and addnl. facilities at air base, Spec. 1627, BEALE AIR FORCE BASE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids July 8. CD 6/19.

▲ **M & K Corp. and Fredrickson Constr. Co.**, Financial Center Bldg., San Francisco, Calif., LB, **$343,845**, using concrete pipe; LB **$447,295**, alternate A, using vitr. pipe; Proj. 1, Sch. A, Clawiter Interceptor for sewers; LB **$266,512**, concrete pipe; LB **$277,912**, using vitr. pipe for Proj. 1, Sch. B, Tennyson Interceptor for sewer;

Barrett & Hilp, 918 Harrison St., and **De Luca & Son**, 1745 Filbert St., both San Francisco, Calif., LB, **$920,443**, Sewer Proj. 2, sewage treatment plant, HAYWARD, CALIF. City, City Hall, Hayward, Calif. Bids July 7. CD 6/11.

▲† **Haddock Engineers Ltd.**, 1616 S. Greenwood Ave., Montebello, Calif., LB. **$1,970,000**, enlisted men's club, supply facilities, pump house, service station NOY 71090, Spec. 32644, MIRAMAR, CALIF. Dpt. Navy, San Diego, Calif. Bids July 11. CD 6/17.

A. Teichert & Son, Box 436, North Hollywood, Calif., CA. **$694,615**, constr. May Canyon Debris Basin and Channel, Sunland, LOS ANGELES, CALIF. Los Angeles County Flood Control Dist., 751 S. Figueroa St., Los Angeles. Calif. Bids June 10, awarded July 1. CD 6/17, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Compton Union High School District, 601 S. Acacia St., Compton, Calif., rejected bids June 13, Enterprise High SCHOOL, COMPTON, CALIF. LB **$648,989**. CD 6/23, under LB.

▲ **Bein Constr. Co., and Natham Fish, Inc.**, 139 S. Beverly Dr., Beverly Hills, Calif., CA, **$2,817,000**. JUNIOR COLLEGE, Artesia St. and Santa Fe Ave., COMPTON, CALIF. Compton Junior College Dist., 601 S. Acacia St., Compton, Calif. Bids June 11. CD 6/17, under LB.

▲ **Dollard Homes, Inc.**, c/o owner, CA. **$1,469,500**. 137 frame, stucco DWELLINGS, Iroquois, Ladoga and Josie Ave., LAKEWOOD, CALIF. Lakewood Plaza Six, Inc., 13421 San Antonio St., Norwalk, Calif.

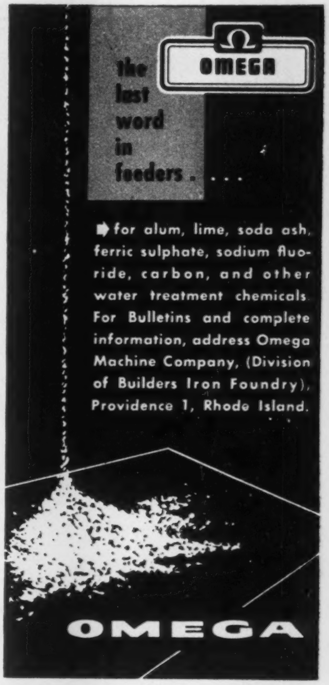
Robert E. McKee Inc., 4700 San Fernando Rd., Los Angeles, Calif., LB **$841,700**, 4 story, CANCER RESEARCH BLDG. addn., LOS ANGELES, CALIF. University of California, 405 Hilgard Ave., Los Angeles, Calif. Bids June 26. CD 6/11.

▲† **Alliance Constr. Co.**, 308 Monterey Rd., South Pasadena, Calif., LB, **$2,637,473**. SUBSIDENCE bldg., BAKERY, and 8 BARRACKS Construction Batalion Center, PORT HUENEME, CALIF. Dpt. Navy, San Diego, Calif. Bids July 9. CD 6/23.

▲ **Claude T. Lindsay Co.**, 2230 Turk St., San Francisco, Calif., LB, **$2,253,445**, construct, manage and finance 326 unit Navy HOUSING, PORT HUENEME, CALIF. Dpt. Navy, San Diego, Calif. Bids July 2. CD 6/10.

▲ **Allison Honer Co.**, 312 N. Main St., Santa Ana, Calif., CA, **$1,045,263**, SOCIAL SCIENCES and HUMANITIES BLDG.;

H. M. Hodges, 5531 Venice St., Los Angeles, Calif., CA, **$855,900**, PHYSICAL SCIENCE BLDG.;



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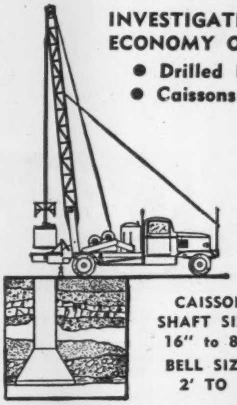

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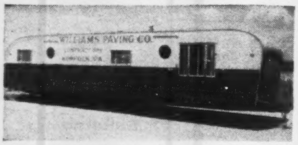

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Brunzell Constr. Co., 3945 Higuera St., Culver City, Calif., CA, **$1,091,409**, PHYSICAL EDUCATION BLDG.;

J. Putnam Henck, Skyforest, Calif., CA, **$623,433**, LIBRARY and CLASSROOM BLDG., at University of California, Riverside Campus, RIVERSIDE, CALIF. University of California, 405 Hilgard Ave., Los Angeles, Calif. Grand total $3,616,005. Bids June 10, awarded June 27. CD 6/16.

▲ **Jackson Bros.**, 3475 W. 9 St., Los Angeles, Calif., CA, **$3,500,000**, 4 story, rein.-con. TEMPLE, WEST LOS ANGELES, CALIF. Church of Jesus Christ of Latter Day Saints, 47 E. S. Temple St., Salt Lake City, Utah, Edward O. Anderson, 47 E S Temple St., Salt Lake City, Utah, archts. CD 2/25/46.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **Alaska, Anchorage**—B.A. 8/6—Alaska P. Wks., Dpt. Interior, Juneau, 42,000 ft. steel, asbestos cement or c.i. water mains to Eastchester area, Proj. Aaa 50-A-120, $676,000; water distr. sys. in Airport Heights area, Proj. 50-A-157. Plans deposit $25 each. C. Tryck, city engr. CD 12/17/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Grove, Shepherd, Wilson & Kruge, Inc.**, 247 Park Ave., New York, N. Y. CA. **$4,630,425**, nine 3-story 37x220 ft. rein.-con. airmen dormitories and three 14,000 sq. ft. 1 story masonry mess and admin. bldgs. with outside utilities, ENG 95-507-52-49, Elmendorf Air Force Base, ALASKA. U. S. Eng., 3013 Arcade Bldg., Seattle 1, Wash. Bids July 8. CD 7/15, under LB.

▲† **Birch-Lytle & Green**, Anchorage, Alaska, CA. **$1,097,314** road and street paving, Inv. 52-36, FORT RICHARDSON, ALASKA. U. S. Eng., Anchorage, Alaska. Bids July 8. CD 7/15, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Alaska Plywood Corp.**, Juneau, Alaska, Day Labor. **$1,000,000.** 80x700 ft. PLYWOOD PLANT, JUNEAU,, ALASKA. CD 8/27/51.

CANADA

BIDS ASKED—BUILDINGS

▲ **Man., St. Boniface**—HOSPITAL—B.A. 8/6—St. Boniface Hospital Expansion & Building Fund, St. Boniface Hospital, St. Boniface, 8 story, wing, steel frome hospital, remodelling present structure, $5,500,000, Green Blankstein & Russell, Time Bldg., Winnipeg, archts. CD 7/9.

▲ **Ont., Sault Ste Marie**—HOSPITAL—B.A. 8/14—Plummer Memorial Public Hospital, Sault Ste Marie, 5 story, 117 ft. long wing, 1 story, L-shaped wing, steel, frame, brick 161-bed hospital, $1,000,000. Plans deposit $75, Rounthwaite & Fairfield, 22 Harbord St., Toronto, archts. CD 11/27/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Claydon Co. Ltd., 290 Garry St., Winnipeg, Man. CA Est. **$500,000.** underground steam distr. sys. at R. C. A. F. Station, COLD LAKE, ALTA. Defence Constr. Ltd., 400 Kensington Bldg., Winnipeg, Man. Bids June 17. CD 6/6.

▲† **The Tower Co. Ltd.**, 1509 Mackay St., Montreal, Que., CA. **$2,533,032**, 7 bldgs. plus services and paving at Pepperell Base, ST. JOHN'S, NEWFOUNDLAND. U. S. Eng., Northeast Command, Pepperell, Newfoundland. Praeger & Maguire, 126 E. 38 St., New York, N. Y., engrs. O'Connor & Kilham, 101 Park Ave., New York, N. Y. and Eggers & Higgins, 100 E. 42 St., New York, N. Y., archts. Bids July 1., awarded July 9. CD 6/26.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Jackson-Lewis Co. Ltd.**, 80 King St. W., Toronto, Ont. CA, Est. **$2,000,000.** 2 story, 140x600 ft. PLANT addn., 2 story, rein-con. OFFICE, TORONTO, ONT. International Business Machines Co. Ltd., Don Mill Rd., Toronto, Ont. C. G. MacLean, 577 Eglinton Ave. W, Toronto, Ont., archt. A. Tobias, 269 College St., Toronto, Ont., engr. CD 5/29/52.

U. S. POSSESSIONS

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Hawaiian Dredging Co., Ltd.**, P.O. Box 3468, Honolulu 7, T.H., CA. **$3,497,000** 45 separate APARTMENTS with combined total of 400 dwelling units and administration bldg. T.H. 1-5, "Kalihi Valley," HONOLULU, T.H. Hawaii Housing Auth., Lee Mace, Executive Dir., Iolani Palace Grounds, Honolulu, T.H. Bids June 6, awarded July 9. CD 6/24, under LB.

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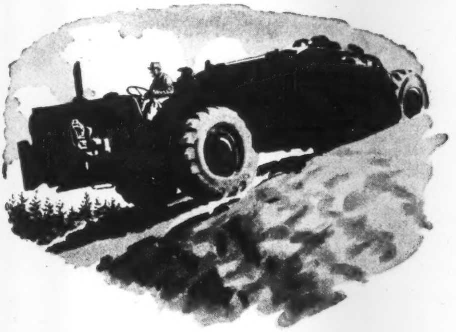

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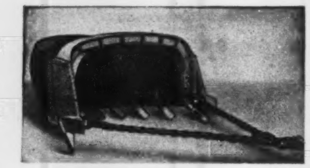

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NEW ENGLAND

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., State House, Augusta,

A. P. Wyman, Inc., 232 College Ave., Waterville, Md. LB. **$303,063.** hys., Jackman and Perlin Pond;

Warren Bros. Roads Co., 33 Cambridge Parkway., Cambridge, Mass. LB. **$192,997.** hy., Macwahoc. Bids July 9. CD 7/3.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,

The Henley-Lundgren Co., 193 Hartford Pike, Shrewsbury, Mass. LB. **$384,542.** est. $330,000. reconstr. hy., Worcester. Bids July 8. CD 6/24.

▲ **RHODE ISLAND**—State Div. Purchases, at office Franklyn A. Adams, purch. agt., State House, Smith St., Providence,

S & M Constr. Co., 30 Salmon St., Providence, R. I. LB. **$1,192,751.** Contr. 1, Tower Hill Rd. wid'n. 7.082 mi. R. I. Cont. 5215, FAP F-05 (1), in North and South Kingstown, Washington Co. Bids July 9. CD 6/26.

BUILDINGS

LOW BIDS AND CONTRACTS

Hingham Park, Inc., 10 Tremont St., Boston, Mass. Owner Builds. CA. Approx. **$450,000.** 48 HOUSES, Fottler Rd., HINGHAM, MASS. Lester N. Lechter, 8 Maria Ave., Sharon, Mass., archt.

MIDDLE ATLANTIC

BIDS ASKED—BUILDINGS

Md., Mount Wilson—HOUSING—B.A. 7/31—State, Dpt. P. Imprvs., 506 Park Ave., Baltimore, Zone 1, four 1 and 2 story, bsmnt., brick, block doctor's residence and 4 group apartment bldgs., Mt. Wilson State Hospital, $475,000. Plans deposit $50, Finney, Wolcott & Assoc., 320 W. 24 St., Baltimore, archts. Frank Fohm Jr., 3006 Iona Terrace, Baltimore, struct. engr. Henry Lee Dodson, 320 W. 24 St., Baltimore, mech. engr. CD 10/25/51.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office bldg., Albany,

Bero Eng. & Constr. Corp., McKinley Bldg., Buffalo, N. Y., LB **$1,324,907**, est. $1,325,000, 7.28 mi. Belfast-Caneadea S. H. 5615, FA.RC. 52-66, Allegany Co.;

Hendrickson Bros. Inc., 63 N. Central Ave., Valley Stream, N. Y., LB **$735,221**, est. $956,000, 3.03 mi. Sunken Meadow Spur Parkway, Cont. No. 1, SMSP. 52-1, Suffolk Co.;

Collins Bros., Waterford Rd., Mechanicville, N. Y., LB **$2,774,813**, est. $3,020,000. 4.65 mi. New York State Thruway, Catskill Sect. Subdivision 1-3, Slingerlands-Albany S. H. 5237; Albany-Guilderland S. H. 5155, City of Albany; Delaware Ave. and Krumkill Rd.; Russell and Schoolhouse Rds., C. R. 204, C. T. 52-2P. C. T. C. 52-3P. R. C. 52-73, S. T 52-14. S. T. 5215, Albany Co.;

Mid State Builders, Inc., 622 South St., Utica, N. Y. LB **$166,302**, est. $191,000. 3.24 mi. Nobleboro-Morehouseville, S. H. 874, FA.RC. 52-70, Hamilton Co.;

Madison County Constr. Co. Inc., Madison, N. Y., LB **$947,944**, 10.95 mi. Auburn-Skaneateles, Pts. 1 and 2, S. H. 9037; Skaneateles Village; Genesee St.; Skaneateles-Lafayette, Pts. 1 and 2, S. H. 8356 and 8360, Marietta-Marcellus S. H. 971, Cont No. 1, F. A. R. C. 52-67. Cayuga and Onondaga Counties.;

A. L. Blades & Sons, Hornell, N. Y. LB **$233,466**, est. $234,000. 3.97 mi. Belfast-Transit Bridge, S. H. 1259, F. A. R. C. 52-65, Allegany Co.;

Louis Argenio, Inc., 383 Broadway, Newburg, N. Y. LB **$160,511**, est. $181,000. 5.21 mi. Manchester Bridge Billings, S. H. 8365, Pt. 1, S. H. 9298. FA. RC. 52-43, Dutchess Co;

Dale Eng. Co., 404 Court St., Utica, N. Y. LB **$222,757**, est. $274,000. 4.52 mi. Augusta Road-Lowell and Spencer Sections S. H. 438, FA. RC. 52-64, Oneida Co.;

Auburn Constr. Co., Auburn, N. Y., LB **$174,424**, est. $186,000. 3.24 mi. South Butler-Conquest, Pt. 1, County Rd. FA.SS. 52-11, Wayne Co.;

John B. Schultz Contg. Co., Inc., Buffalo, N. Y., LB **$187,173**, est. $189,000. 1.22 mi. Cassadaga-Fredonia S. H. 938; Fredonia Village S. H. 1052, FA. RC. 52-61, Chautauqua Co.;

Binghamton Constr. Co. Inc., Marine Midland Bldg., Binghamton, N. Y. LB **$199,410**, est. $202,000. 5.63 mi. Castle Creek S. H. 267, FA.RC. 52-69, Broome Co.;

I. & O. A. Slutsky, Hunter, N. Y., LB **$623,380**, est. $642,000, 4.5 mi. Livingston-Manor-Youngsville, Pt. 2 FA.SS. 52-5, Sullivan Co.;

received no bids July 10, FA.RC 52-68, Onondaga Co. CD 6/18.

▲ **S. J. Groves & Sons Co.**, 19 Rector St., New York, N. Y., LB **$1,627,451**, utilities and paving, Contr. NA 170.036, Newark Airport, NEWARK, N. J. Port of New York Auth., 111 8th Ave., New York 11, N. Y. Bids July 8. CD 6/16.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

Wright Contg. Co., 504 25 Ave., Columbus, Ga. LB **$1,227,587.** grading, drainage, surf. 2.145 mi. Annapolis By Pass incl. 2 grade separation structures concrete box culvert ramp connections, Contr. AA 263-13-515, Anne Arundel Co.;

T. B. Gatch & Sons, Inc., 5928 Belair Rd., Baltimore, Md. LB **$358,154**, grading, drainage, wid'n., resurf. 3.504 mi. State Rte. 343, Contr. D 224-115, Dorchester Co.;

F. P. Asher Jr. & Son, West Extension, Annapolis, Md. LB **$384,636.** grading, drainage relocation surf. 6.269 mi. State Rte. 231, Contr. CH 272-1-515, Charles Co. Bids July 1. CD 6/19.

MARYLAND—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

W. E. Graham & Sons, Cleveland, N. C. LB **$664,243.** grading, drainage, surf. 2.259 mi. State Rte. 198, Scaqsville-Burtonsville Rd., Contr. Ho-218-6-715, Howard and Montgomery Counties. Bids July 8. CD 7/2.

▲† **Williams Constr. Co.**, Middle River, Md. LB **$2,282,879.** runway extension, concrete paving, drainage, Patuxent Naval Air Station, Serial No. 6-24, NOY 72194, PATUXENT RIVER, MD. Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Bids June 18. CD 5/28.

▲ **DELAWARE**—State Hy. Dpt., Dover,

Henry C. Eastburn & Son, Inc., Newark, Del., LB **$869,078**, c. conc. divided hy. 2.436 mi. Concord Pike, Baynard Blvd. to Murphy Rd. Cont. 799, New Castle Co. CD 6/11;

Standard Bitulithic Co., foot of Brill St., Newark, N. J., LB **$486,364**, imprv. portion of Concord Pike and existing highway from Summit Bridge to Tybout's Corner Cont 1161, New Castle Co. Bids June 25. CD 6/5.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Montgomery Constr. Co.**, 803 Main St., Grove City, Pa., CA. **$1,443,900**, G.S.A. WAREHOUSES 1 and 2, at Letterkenny Ordnance Depot, Serial No. Eng 18-52-54, CHAMBERSBURG, PA. U. S. Eng., 24 St. and Maryland Ave., Baltimore, Md. CD 7/10 under LB.

SOUTH

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **GEORGIA**—State Hy. Dpt., Atlanta,

Georgia-Alabama Paving Co., Brookhaven Rd., Columbus, Ga. CA. **$504,999.** grading, paving 6.639 mi. Valdosta, Georgia-Jasper Florida Rd., S.R. 7, U.S. Rte. 41 approx. 5 mi. south of Valdosta partly on relocation extens. south to Laek Park, F.A. Proj. F 001-1 (2), Lowndes Co.;

White Constr. Co., Inc., Bronson, Fla. CA. **$920,049**, grading, paving, 3 bridges, 1 overhead bridge 11.863 mi. at A. C. L. R.R. on Sylvester to Tifton Rd. S.R. 50 begins at S.R. 33 in Sylvester and extends to point near west city limits of Ty Ty and incl. connection along Hunton St. in Poulan, F.A. Proj. F 026-2 (3), Worth and Tift Counties;

MacDougald Constr. Co., Northside Dr., Atlanta, Ga. CA. **$314,699.** grading, paving relocation 2.951 mi. Blue Ridge-McCaysville Rd. S.R. 5 begins in Blue Ridge approx. 2,100 ft. north of L. & N. R.R. crossing on S.R. 5 extends northwest to connect with present S.R. 5 northwest of Blue Ridge, F.A. Proj. F 057-2 (1), Fannin Co.;

Oxford Constr. Co., Albany, Ga. CA. **$116,115.** grading, base surf. tr. 6 mi. Arlington to Morgan Rd. S.R. 45 begins at intersection of S.R. 62 in Arlington and extends northeast toward Morgan, F.A. Secondary Proj. S 0526 (4), Calhoun Co.;

E. F. Groover, Moultrie, Ga. CA. **$68,801.** grading, paving 4.573 mi. Nashville-Tifiton Rd. S.R. 125 begins approx. 10 mi. north of Nashville extends Tifton, F.A. Secondary Proj. S 0553 (4), Berrien Co.;

Lothbridge Brothers, Gainesville, Ga. CA. **$107,938.** grading base, surf. tr. 5.052 mi. Molena to Meansville Rd. S.R. 109 begins at S.R. 3 approx. 4 mi. south of Zebulon extends west toward Molena, F.A. Secondary Proj. S 0759 (1), Pike Co.;

Ledbetter-Johnson Co., Rome, Ga. CA. **$110,329.** grading, base surf. tr. 2.117 mi. Trenton to Alabama State line Rd. begins approx. 3.4 mi. west of Trenton and ends at Alabama State line, F.A. Secondary Proj. S 0812 (2), Dade Co.;

Leno DeShong Land Clearing Co., Valdosta, Ga. CA. **$89,746.** grading, surf. tr. 3.532 mi. Mayday to Homerville Rd. S.R. 187 begins in Haylow and extends Clinch Co. line, S.A. Proj. SAP 1219 A (2), Echols Co.;

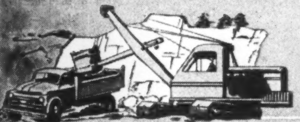
W. L. Cobb Constr. Co., Decatur, Ga. CA. **$119,764.** grading, base surf. tr. 6.458 mi. Spring Place to Cleveland, Tenn. Road FAS-Route 824 begins approx. 9.8 mi. north of Spring Place and ends at Tennessee State Line, F.A. Secondary Proj. S 0824 (3). Murray Co. Grand total $2,352,440. Bids June 27. CD 6/18.

FLORIDA—State Rd. Dpt., Tallahassee,

Industrial Contg. Co. & Assoc., Jacksonville, Fla., LB. **$849,608**, constr. 999 ft. bridge composed of an electrically operated double leaf bascule span and 14 steel I-beam spans with concrete deck on concrete piers, Proposed Extension of Road No. Ala (S.E. 17 St.), in Fort Lauderdale, Job 8168-175. Bids July 2. CD 5/19.

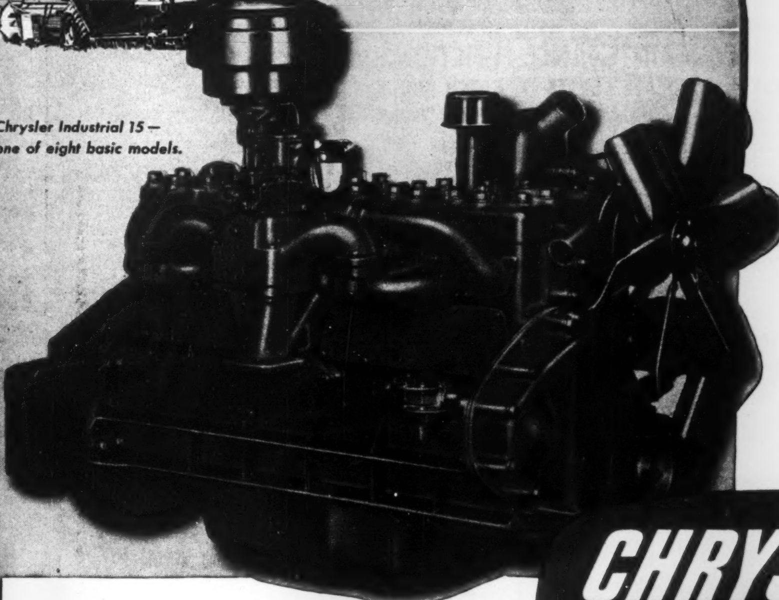
Continued on page 104

FIGHTING HEART



. . . of all this

equipment!



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- Crane Carriers
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- Air Compressors
- Hoists
- Derricks
- Pumps
- Generators
- Conveyors
- Tackle Blocks
- Winches
- Tractors
- Combines
- Gang Mowers
- Spreaders
- Irrigation Equipment
- Orchard Sprayers
- Hay Choppers
- Pumps
- Feed Mills
- Sprinklers
- Locomotives
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- Drilling Equipment
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- Oil Well Pumps and Drillers

Original equipment manufacturers the nation over install Chrysler Industrial Engines in their equipment because Chrysler-built means better performance . . . rugged dependability . . . trouble-free operation . . . longer operating life, service everywhere.

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STANDARD STEEL "S-J" *for* PATCHING SPEED

PERFORMS EVERY MAINTENANCE FUNCTION...
SPRAY SHOULDERS • RELOCATE CURVES • PATCH CHUCK HOLES • SEAL COAT *and* SECONDARY CONSTRUCTION WORK

Powered by either 7.2 h.p. or 15 h.p. engine, equipped with a 100 GPM Pump, this Model "S-J" will handle any type of material with equal efficiency — uniformly applying material from end to end of spray bar up to 10-foot length. Two powerful burners supply intense heat through 5-inch heat flues — and fast heating is assured. Dual lever controls all operations. A curb side gravity draw-off permits easy crack-filling and sealing.

Mayor Ray E. Otten, Versailles, Mo., says: "We're doing some fine work with this machine . . . ." It's a money-saver on any type job that can be handled with this fast working equipment.

WRITE FOR CATALOG "S-J"

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Standard Steel Works NORTH KANSAS CITY, MO

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Use this Class "E" Clam Shell Bucket for handling crushed stone, gravel, sand and other bulk materials.
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PROMPT SHIPMENT
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Continued from page 102

FLORIDA—State Rd. Dpt., Tallahassee,

R. H. Wright & Son, 1050 N.E. 5th Terrace, Fort Lauderdale, Fla., LB. **$595,920**, est. $800,000. grading, stabil., paving, small drainage structures, etc. State Rd. 9, between Opa Locka and the Broward Co. line, UI-026-1(7), Dade Co. Bids July 2. CD 6/11.

▲† **Paul Smith Constr. Co.**, 1612 S. Monroe St., Tallahassee, Fla., CA. **$2,280,000**. installation bldg., Inv. 52-65, EGLIN AIR FORCE BASE, FLA. U. S. Eng., Post Office Bldg., Mobile, Ala. CD 7/8, under LB.

C. T. Stockton, Inc., 660 N.W. 54 St., Miami, Fla., CA. **$746,032**, street imprvs., NORTH MIAMI, FLA. Town, North Miami, Fla. Bids July 2. CD 11/9/44.

▲ **ALABAMA**—State Hy. Dpt., Montgomery,

Moss-Thornton Co., P. O. Box 127, Leeds, Ala. LB **$80,508**. bit. tr. 0.681 mi. road from Cordova toward Gorgas, FA S 12 (2), Walker Co.; LB **$84,758.**, grading, drainage 6.459 mi. part of Hammondville-Ider Rd., FA S 503 (2), DeKalb Co.;

W. A. McWaters, 2 Clayton St., Montgomery, Ala. LB **$381,329**. bit. tr. 0.761 mi. U. S. 31 at Homewood, U. I. 18 (7), Jefferson Co.;

Southern Road Builders, Inc., Augusta, Ga. LB **$743,200.** c. conc. 6.859 mi. Cullman-Decatur Rd., F. I. 82 (2), 83 (3) and 151 (3), Cullman and Morgan Counties.

Birmingham Slag Co., P. O. Box 155, Birmingham, Ala. LB **$78,080**. crushing, aggregate grading, drainage 1.226 mi., F. I. 82 (2), 83 (3) and 151 (3), Cullman and Morgan Counties;

J. B. Maynard, Alex City, Ala. LB **$116,015**. bit. tr. 10.533 mi. road from Micaville to Ala. 46 at Union Hill, FA S 197 (3), Cleburne Co.;

Joe F. Walters, Box 96, Troy, Ala. LB **$78,718**. base bit. tr. 12.009 mi. on roads from Yellow River to Wing and south toward Oaky Streak, FA S 200 (2) and SACP 7167 A, Covington Co.;

W. W. Townsend Excav. Contg. Inc., 1015 19 Ave. E., Tuscaloosa, Ala. LB **$120,981**. base, bit. tr. 7.554 mi. Hanceville-Walter and Hanceville-Arkadelphia Rds., FA S 201 (3), 567 (1) and SACP 1125-A, Cullman Co.;

J. W. Gwin Jr., 1803 Comer Bldg., Birmingham, Ala. LB **$197,154**. bit. tr. plant mix, bridge 1.763 mi. Anniston Bypass, F. I. 291 (2) Proposals C and D, Calhoun Co.;

McKee Constr. Co., Box 688, Jackson, Ala. LB **$135,766**. grading, drainage 8.208 mi. county road from Fairview west to Ala. 19 north of Vernon, SACP 393 A, Lamar Co.;

Clyde O. Mitchell, 104 N. 44 St., Birmingham, Ala. LB **$369,808**. bit. tr. 12.398 mi. Jones Mill-Hubbertville-Glen Allen Rd., FA S 529 (1), Fayette Co.;

S. T. Shepherd Constr. Co., 4134 Terrace R, Birmingham, Ala. LB **$99,474**. base bit. tr. 11.19 mi. roads from Land to Ala. 29, Bladen Springs toward Silas and Land to Needham, FA S 545 (1) (2), SACP 666 A and 693 A, Choctaw Co.;

Newell Brothers Constr. Co., Hope Hull, Ala. LB **$208,920**. bit. tr. 8.253 mi. Abbeville-Alexander Mill Rd., FA S 550 (1), Henry and Barbour Counties;

Laidlaw Contg. Co., Spring Hill, Ala. LB **$269,250**. bit. tr. 13.038 mi. Celeste Rd., FA S 551 (1), Mobile Co. Bids June 27. CD 5/22.

BUILDINGS

LOW BIDS AND CONTRACTS

Barge-Thompson Co., 136 Ellis St., N. E. Atlanta, Ga., CA. Approx. **$500,000**. completion of HOSPITAL, ATLANTA, GA. St. Joseph's Infirmary, Ivy St. N. E., Atlanta, Ga. CD 11/15/46.

▲ **Algernon Blair**, 1st. Natl. Bank Bldg., Montgomery, Ala. Owner Builds. **$1,500,000**. 200 RESIDENCES, WARNER ROBINS, GA.

Jules E. Bloch, 6500 Collins Ave., Miami Beach, Fla. Owner Builds. **$500,000**. 65 APARTMENT units, MIAMI BEACH, FLA.

▲ † **J. W. Bateson, Inc.**, Irwin-Keasler Bldg., Dallas, Tex., CA. **$4,663,775**, 4 WAREHOUSES at Anniston Ordnance Depot, ENG 01-076-52-69, ANNISTON, ALA. U. S. Eng., P. O. Box 1169, Mobile 7, Ala. Bids May 15. CD 7/2, under LB.

MIDDLE WEST

BIDS ASKED—BUILDINGS

Mich., Buchanan—SCHOOL—B.A. 8/5—Bd. Educ., School Dist. 1 Fractional, 2 story, bsmnt., high school addns., alterations, $700,000. Plans deposit $25, Warren S. Holmes Co., 2200 Olds Tower Lansing, archt. CD. 1/22.

BUILDINGS

LOW BIDS AND CONTRACTS

Marvin Helf, Inc., 641 E 266 St., Euclid, O. Owner Builds. **$750,000**. 25 stone, frame HOUSES, Greenlawn Ave., BEACHWOOD, O.

▲ **Christman Constr. Co., Inc.**, 850 Fellows St., South Bend, Ind., CA. **$3,000,000**. FACTORY addn., sewers, LAPORTE, IND. Allis-Chalmers Mfg. Co., West Allis, Wis. Bids June 27. CD 6/26.

WEST OF MISSISSIPPI

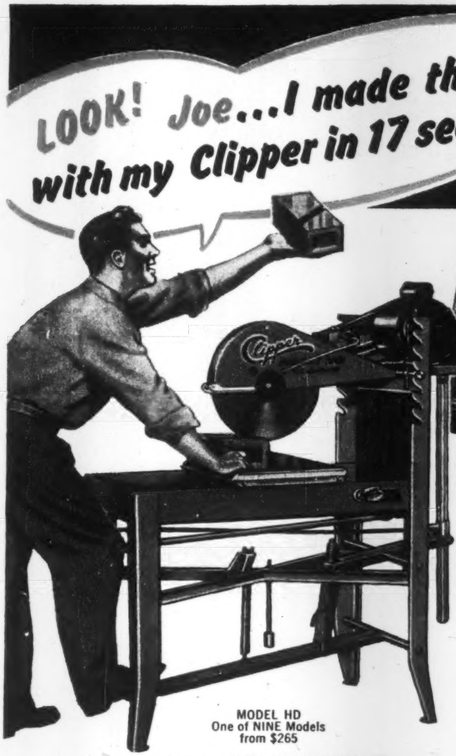
BIDS ASKED—HEAVY CONSTRUCTION

▲† **Montana**—B.A. 8/12—Bureau Reclamation, Dpt. Interior, Civic Center Bldg., Great Falls, constr. Tiber Dam and dike, Lower Marias Unit, Marias Division, Missouri River Basin Proj., 13 mi. south of Tiber, Spec. 3128. CD 3/28/51, under LB.

BIDS ASKED—BUILDINGS

N. M., Las Cruces—LABORATORY—B.A. 7/31—U. S. Eng. Box 1538, Albuquerque, laboratory extens., Inv. No. 29-005-53-4, White Sands Proving Ground. Approx. $750,000. Plans deposit $100. CD 8/28/51.

Continued on page 109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One of NINE Models
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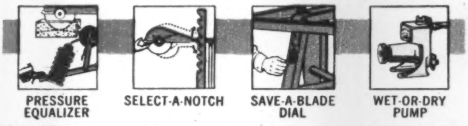
Yes, you can slice through the hardest materials in seconds with a CLIPPER MASONRY SAW. Smoother, faster cutting action than ever before. Contractors agree on the new WET or DRY cutting MODEL HD for the 100% Answer to ALL masonry cutting problems. Actually the HD is "4 SAWS in 1"—it will meet your DUSTLESS cutting requirements in confined areas, it will cut DRY for outside operations, it can be "CONVERTED" to a (Light Duty) *Concrete Saw* and a *Track Saw!* Yes, now greater profits than ever before with a "CONVERTIBLE" Clipper Masonry Saw!

PATENTED CLIPPER FEATURES

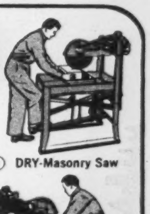


PRESSURE EQUALIZER · SELECT-A-NOTCH · SAVE-A-BLADE DIAL · WET-OR-DRY PUMP

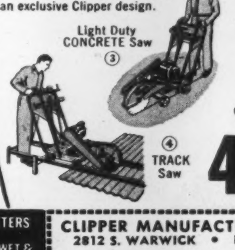
With a Clipper on the job masonry cutting is easy . . . just place the material on Conveyor Cart . . . the *SELECT-A-NOTCH* instantly sets cutting head for material size. A quick setting of the *Save-A-Blade Dial* and the *Pressure Equalizer Spring* automatically cushions the blade for faster cutting—longer life. During DUSTLESS cutting the *WET-or-DRY PUMP* delivers the exact flow of water and when switching to Dry cutting the belts need not be disconnected.

. . . NOW YOUR CLIPPER IS "CONVERTIBLE"!

At any time the cutting head of your Model HD Clipper can be placed on the "CONVERTIBLE" CART...you're ready to saw concrete or asphalt patches or trenches. No more fractures beyond removal lines—no spalling! But there's more ...just set the CART on TRACKS and operate as a TRACK SAW on stone slabs. The Clipper "CONVERTIBLE" is an exclusive Clipper design.

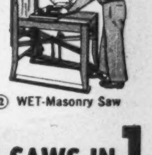


① DRY-Masonry Saw



Light Duty CONCRETE Saw ③

④ TRACK Saw



② WET-Masonry Saw

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POWER THAT PAYS

Atlanta airport expansion job is scene of new triumph for International power

When C. A. A. district headquarters decided to move to Atlanta, Georgia, the east-west runway at nearby Fulton County Airport had to be extended to 5,000-foot length.

One contractor, C. L. Rhodes of Decatur, Georgia, is doing the entire job, including cutting through a 39-foot hill and moving 350,000 cubic yards of sandy clay.

Rhodes' General Superintendent, R. N. Smith, tells how the work is going:

"We load quicker, haul faster and move more dirt with our Internationals than with any other crawlers.

"Our operators push 'em to the limit all day long to get the job done ahead of schedule. The tractors get clean filters, fuel and grease, and hard work—more hard work than is reasonable—and they take it month after month without a let down!"

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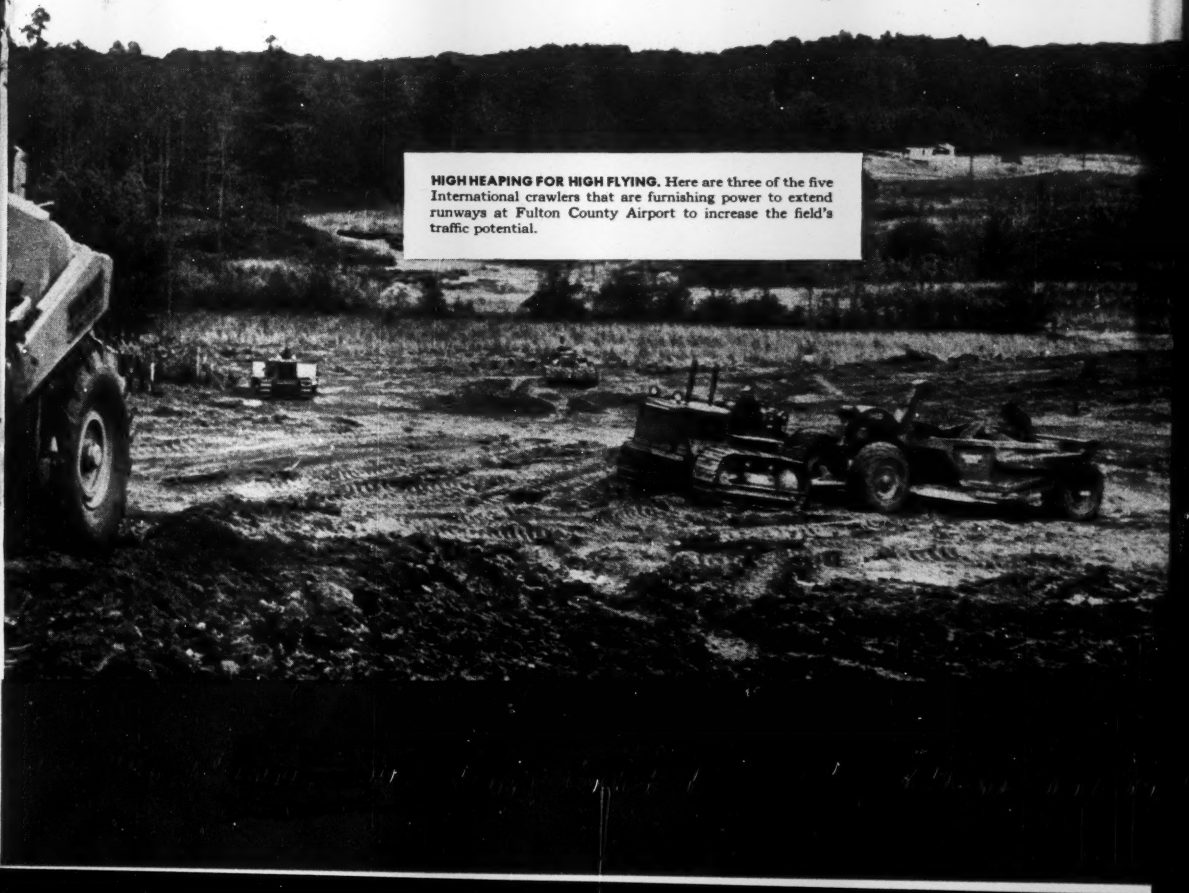
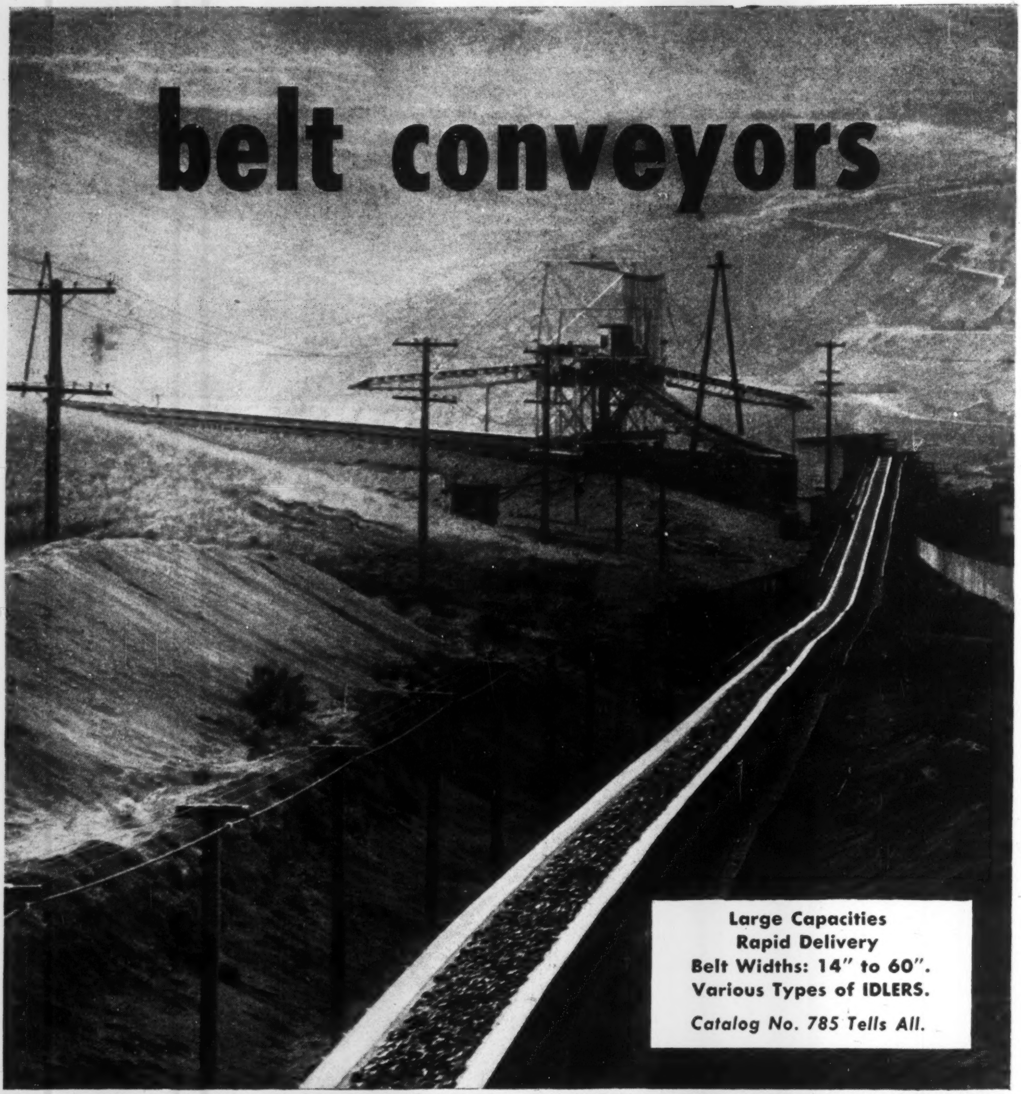
JOHNNY-ON-THE-SPOT SERVICE. A fast field service team from International's Atlanta distributor rolls up to the job site. Service like this from *your* International distributor is as near as your nearest telephone, to cut down downtime and keep your equipment rolling!



HIGH HEAPING FOR HIGH FLYING. Here are three of the five International crawlers that are furnishing power to extend runways at Fulton County Airport to increase the field's traffic potential.

belt conveyors



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British Jeffrey-Diamond Ltd., Wakefield, England
Jeffrey-Galion (Pty.) Ltd., Johannesburg, S. A.
The Galion Iron Works & Mfg. Co., Galion and Bucyrus, Ohio
[illegible], England
The Ohio Malleable Iron Co., Columbus, Ohio

Continued from page 104

BUILDINGS

LOW BIDS AND CONTRACTS

† **O. G. Bradbury,** Box 1628, Albuquerque, N. M. LB **$457,875.** out-patient CLINIC, Serial No. Eng 29-005-52-74, ALBUQUERQUE, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids July 3. CD 6/13.

FAR WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **General Electric Co.,** River Rd., Schenectady, N. Y. LB **$7,763,735,** main unit generators 9 to 12 (inclusive) for McNary Dam, CIVENG 45-164-52-112, OREGON. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids July 8. CD 5/29.

▲ † **Ford J. Twaits Co. Inc.,** 449 S. Beaudry St., Los Angeles, Calif., LB **$1,813,475,** steel Aircraft Maintenance Hangar (First Increment) at the Marine Corp Air Station, Spec. 33732, EL TORO, CALIF. Dpt. Navy, San Diego, Calif. Bids July 8. CD 6/12.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Griffith, Cornall & Carman, Inc.,** 1085 S. 4th West St., Salt Lake City, Utah, CA. **$1,500,000.** 290 HOMES, El Serrito Subdivision at Wasatch Dr. and 33rd South Sts., SALT LAKE CITY, UTAH. Knight Realty Co., 756 S. Main St., Salt Lake City, Utah.

▲ **Yermo Housing, Inc.,** 4015 W. Jefferson Blvd., Los Angeles, Calif., LB **$3,098,000,** construct, manage finance Naval HOUSING, Proj. N-21, BARSTOW, CALIF. Dpt. Navy, San Diego, Calif. Bids July 8. CD 6/10.

▲ **Barrett & Hilp,** 918 Harrison St., San Francisco, Calif., CA. **$1,342,871,** 75-bed HOSPITAL, on 15-acre site, EUREKA, CALIF. Sisters of St. Joseph, St. Joseph's Hospital, Eureka, Calif. Bids Mar. 15, awarded July 8. CD 5/9, under LB.

▲ **Johnson, Drake & Piper,** 9909 San Leandro St., Oakland, Calif., CA. **$4,149,000,** general constr.;

Wismer & Becker, 1219 28 St., Sacramento, Calif., CA $530,870, electrical work;

Macnsons Contg. Engineers, 151 Tehama St., San Francisco, Calif., CA. **$1,230,587,** mechanical work for main INSTITUTIONAL BLDGS. for California Medical Facilities, VACAVILLE, CALIF. Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Grand total **$5,910-457.** Bids June 24, **awarded** July 7. CD 7/1 under LB.

CANADA

BIDS ASKED—BUILDINGS

▲ **Ont., Toronto**—BUILDINGS—B.A. 7/29—G. W. Williams, deputy minister Dpt. P. Wks., Toronto, constr. Buildings 1, 2 and 4 at Ontario Food Terminal, Queensway and Parklawn Ave. for Ontario Food Terminal Bd. $3,000,000. Shore & Moffat, 79 Queen St. E., archts. CD 5/7/47.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Modern Constr. Co., Ltd., Salisbury Rd., Moncton, N. B. CA. Approx. **$500,000.** standard M. E. Garage and Refueling Tender Garage at R.C.A.F. Station, CHATHAM, N. B. Defence Constr. Ltd., 1032 Gottingen St. ,Halifax, N. S. Bids May 27. CD 5/12.

▲ **W. H. Yates Constr. Co., Ltd.,** 400 Wellington St. W., Hamilton, Ont. CA. Approx. **$1,400,000.** two 160 ft. span structural steel hangars at R.C.A.F. Station, Job No. 1883, CAMP BORDEN, ONT. Defence Constr. Ltd., 441 Queen's Quay W., Toronto, Ont. Bids June 12. CD 5/24.

BUILDINGS

LOW BIDS AND CONTRACTS

Shields Constr. Co., Howarden Crescent, Toronto, Ont. Own Forces. **$500,000.** four 3 story, bsmnt., brick, concrete block APARTMENTS, Bathurst St. and Saranac Blvd., TORONTO, ONT. E. I. Richmond, 455 Spadina Ave., Toronto, Ont., archt.

Proposed Projects

WATER SUPPLY

▲ **Colo., Greeley**—City, City Hall, **water transmission line, building 4 filter basins to increase capacity,** misc. equip. for mains, tanks and pumps and reservoir channels. **$2,000,000.** Burns & McDonnell Engineering Co., P. O. Box 7088, **Kansas City, Mo.,** consult. **engrs.**

▲ **Ind., Evansville**—Bd. Waterworks Trustees, City Hall, WW impvs. 4 m. **g.** settling basins at filtration plant, **$650,000;** pump station, alterations, **$106,000;** clear well facilities, **$744,000;** feeder mains, **$1,005,000,** Alvord, Burdick & Howson, 1401 Civic Opera Bldg., Chicago, Ill., consult. engrs. CD 6/11.

▲ **Ind., Logansport**—City, WW sys., water treatment plant, distr. reinforcement, distr. storage, new pumping station to be located in Riverside Park, 1 storage tank at 22 and Wright Sts. and 2 others near Dykeman Park. **$2,000,000.** Alfred LeFeber & Assoc., 2933 Woodburn Ave., Cincinnati, O., consult. engrs. CD 1/4.

▲ **Tex., Lubbock**—City, addnl. water mains, distr. lines, **$750,000;** general rehabilitation of WW sys. **$250,000;** water supply, **$250,000;** elevated and ground water storage, **$200,000.** H. N. Roberts & Assoc., 1210 Avenue Q, consult. engrs. W. B. Holmes, city

SEWERS, WASTE DISPOSAL

▲ **N. Y., New Hartford**—Town, sewerage sys. and treatment plant. **$1,000,000.**

Okla., Okmulgee—City, bond election Aug. 5, sewage disposal plant. **$455,000.** L. M. McGoodwin, Fayetteville, Ark., consult. engr. CD 1/30/50.

▲ **Pa., Coraopolis**—Municipal Sewage Auth., Boro Bldg., sewage disposal plant. **$1,000,000.** Gannett, Fleming, Corddry & Carpenter, 600 N. 2 St., Harrisburg, engrs. CD 3/28/46.

▲ **Pa., Oakmont**—Oakmont Boro, Boro Bldg., sewage disposal plant, garbage incinerator, trunk sewers, etc. **$1,000,000.** Chester Engineers, 210 E. Parkway, Pittsburgh, engrs. CD 4/5/51.

Tex., Lubbock—City, sanitary sewer collection sys. imprvs., extens. **$325,000;** sanitary sewer disposal, **$225,000.** H. N. Roberts & Assoc., 1210 Avenue Q, consult. engrs. W. B. Holmes, city engr. CD 3/28.

Wash., Toppenish—City, City Hall, drainage ditches, storm sewers, intercepting trunk sanitary sewer and sewage treatment plant, **$800,000,** Gray & Osborne, Larson Bldg., Yakima, consult. engrs. CD 9/30/49.

▲ **Ont., Cooksville**—Toronto Twp., Municipal Bldg., Cooksville, sewer in twp. in new residential area incl. outlet into Lake Ontario, **$475,000;** outfall sewer **$36,000;** pumping station at Lakeview **$45,000;** station at Port Credit, **$38,000;** mains, **$1,472,000,** W. A. Maxwell, engr.

BRIDGES

Ill., Chicago—City, City Hall, viaduct **extending** Lake St. 180 ft. east of Michigan Ave. **$430,000.**

O., Youngstown—Comrs. Mahoning Co., Court House, repair Market St. Bridge. **$700,000.** Sam Gould, Jr., co. engr. CD 4/20/45.

▲ **SOUTH CAROLINA**—State Hy. Dpt., Columbia,

Charleston Co.—highway bridge **over** Intracoastal Waterway at Dawho on Edisto Island, **$150,000.**

bridge over Intracoastal **Waterway** on **John's Island** **$150,000.**

bridge over Wappoo Creek, **$800,000.**

▲ **Tex., Port Isabel**—Cameron Co., Court House, Brownsville, voted **$2,750,000** bonds July 1, Port Isabel-**Padre Island Causeway.** CD 6/5.

STREETS AND ROADS

▲ **NEBRASKA**—State Dpt. Roads & Irrigation, Lincoln, **Douglas Co.**—Northwest Radial Highway in Omaha from 45 and Cuming to 54 and Military Sts. $1,000,000. H. L. Aitken, state engr.

▲ **OHIO**—Ohio Turnpike Commission, Columbus, has selected engineers to plan 241 mi. Ohio Turnpike from Pennsylvania Turnpike Terminus to Indiana State line:

Mahoning Co.—15 mi. Turnpike. **$11,812,000.** Richardson ,Morehouse, Ramsey & Fisher, Park Bldg., Pittsburgh 22, Pa.;

Mahoning and Trumbull Counties—15.9 mi. Turnpike. **$12,000,000.** Ammann & Whitney, 76 8 Ave., New York 11, N. Y.;

Portage and Summit Counties—37.7 mi. Turnpike. **$28-721,000.** Howard, Needles, Tamman & Bergendorff, 921 Walnut St., Kansas City, Mo.;

Summit and Cuyahoga Counties—16.9 mi. Turnpike. **$17,783,000.** Hazelet & Erdal, Dixie Terminal Bldg., Cincinnati, O.

Cuyahoga and Lorain Counties—15.1 mi. Turnpike. **$14,100.000.** Knappen-Tippets-Abbott-McCarthy, 62 W. 47 St., New York, N. Y.;

Lorain and Erie Counties—17.6 mi. Turnpike. **$15,925,000.** Charles E. DeLeuw, 150 N. Wacker Dr., Chicago, Ill.

Erie Co.—8 mi. Turnpike. **$5,348,000;** bridges over Huron and Sandusky Rivers, **$3,705,000.** Hardesty & Hanover, 101 Park Ave., New York 17, N. Y., and Andrews, Clark & Buckley, 139 E. 57 St., New York, N. Y.;

Erie Co.—10.7 mi. Turnpike. **$8,103,000.** Balke & Watkins, 800 Bway., Cincinnati, O.;

Erie and Sandusky Counties—16.3 mi. Turnpike. **$11,432,000.** Brown & Blauvelt, 46 Cedar St., New York, N. Y.;

Ottawa and Sandusky Counties—16.8 mi. Turnpike. **$13,238,000.** Porter, Urquhardt Associated, 415 Frelinghuysen St., Newark, N. J.;

Lucas Co.—11.9 mi. Turnpike. **$11,283,000.** Alden E. Stilson & Associates, 209 S. High St., Columbus, O.

Lucas and Fulton Counties—12 mi. Turnpike. **$7,907,000.** Vogt, Ivers, Seaman & Associates, Second Natl. Bank Bldg., Cincinnati, O.;

Fulton Co.—11.5 mi. **Turnpike. $7,246,000.** General Industries Engineering Co., and Kenneth Shaffer Associates, 311 S. Broad St., Phila., Pa.;

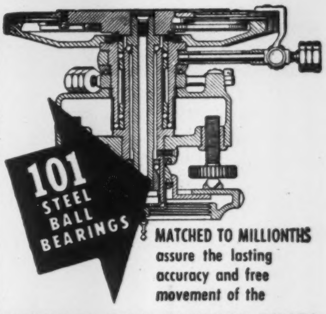
Ottawa and Woods Counties—12.3 mi. Turnpike. **$13,338,000.** Sanzenbacher, Morris & Taylor, and Brookhart & Tyo, Nicholas Bldg., Toledo, O.;

Fulton and Williams Counties—14.7 mi. **$10,856,000.** Consoer, Townsend & Assoc., 351 E. Ohio St., Chicago 11, Ill.

J. E. Greiner Co., 33 North High St., Columbus, Zone 15, are consulting engineers to entire project, which will cost $326,000,000. CD 6/18/52.

EARTHWORK, WATERWAYS

▲ † **Oklahoma**—U. S. Eng., Box 61, Tulsa 2, Okla., Keystone Dam on Arkansas River, 4,600 ft. long, 100 engr. CD 5/15.



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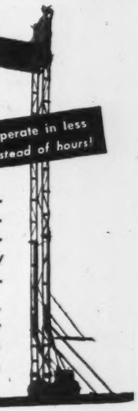

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AIRPORTS

▲† **Ark., Blytheville**—PAVING, etc.—U. S. Eng., 300 Broadway, Little Rock, airfield paving, fuel storage, dispensing facilities, communications, navigational aids, lighting, operation and maintenance facilities, troop housing, family housing, admin. and community facilities, medical bldg., storage and shops at Blytheville Municipal Airport. **$16,000,000.**

Calif., San Francisco—AIR MAIL, and CARGO BLDG.—Pub. Utilities Comn., City Hall, plans by W. P. Day, 111 New Montgomery St., new air mail and cargo bldg. at airport. **$400,000.** CD 6/27.

▲† **Mass., Falmouth**—ROADS, PARKING UTILITIES, etc.—U. S. Eng., 857 Commonwealth Ave., Boston, roads parking utilities, power lines, hydrant refueling, **$1,000,000;** heating plant, auxiliary power, **$500,000;** mogas storage, gas station, pumps, maintenance shops, warehouse, **$500,000,** Gilbert Small & Co., Inc., 10 State St., Boston, consult engr. railroad spur, railroad trestle, **$100,000;** family housing admin. bldg., clothing issue, commissary, cold storage, **$100,000;** BOQ officer's mess, **$60,000,** Otis Air Force Base.

N. Y., Buffalo—APRON and TAXIWAY PAVING—City, City Hall, paving apron and taxiway at Buffalo Municipal Airport. **$554,000.** CD 7/9/48.

LATIN AMERICA

Mexico, Mexico City—Banco Nacional Cinematografico, Ing. Eduardo Vidal Cruz, Dir. Gen., Ejido, 43, plans technicolor motion pictures laboratory. **$500,000.**

▲ **Mexico, Tepichicotlan**-Eduardo Mestre, Tepichiocotlan, Gro., plans sugar refinery, **$1,003,000.**

PUBLIC BUILDINGS

Conn., Bridgeport—SCHOOL—Bd. Educ., 804 Main St., plans by Toby Vece, 121 Wall St., brick, steel, concrete school, Chopsey Hill Rd., north of Trumbull Rd. **$500,000.**

▲ **Ind., Crown Point**—HOME—Bd. Comrs. Lake Co., Court House, plans by Joe H. Wildermuth, 527 Broadway, Gary, 100-bed county home, boiler room, water main extensions, to connect with Crown Point water sys. **$1,000,000.** CD 12/3/51.

▲ **Ky., Lexington**—DORMITORY—University of Ky., S. Lime St., plans by Frankel & Curtis, Central Bank Bldg., 4 story, men's dormitory, **$1,900,000.** CD 10/2/51.

Me., Bangor—SCHOOL—City, School Bldg. Comm., c/o Supt. School Dpt., Bangor, plans by Eaton W. Tarbell & Assoc., 84 Harlow St., grade school, Fruit St. $750,000.

▲ **Mich., Waterford**—SCHOOL—City, Bd. Educ., Waterford, plans by George D. Mason & Co., 409 Griswold St., Detroit, 2 story, bsmnt., brick, steel, concrete Junior High School, **$1,000,000.** CD 5/20.

▲ **N. J., Bellerose**—HIGH SCHOOL—Bd. Educ., 49 Flatbush Ave. exten., Brooklyn, Zone 1, plans by Emery Roth & Sons, 18 E. 48 St., New York, Zone 17, Junior High School 172, on block bounded by 81 Ave., 257 St., 82 Ave. and 256 St. **$2,747,250.** CD 10/21/48.

N. M., Gallup—POWER PLANT, etc.—City, City Hall, power plant and electrcial distr. sys. expansion **$800,000.** Rocky Mountain Engineering Co., 325 Wilda Bldg., Denver, Colo., consult. engr.

▲ **N. Y., Long Island City**—HIGH SCHOOL—Bd. Educ., 49 Flatbush Ave. exten., Brooklyn, Zone 1, Proj. E-324, High School of Aviation Trades, 35 St. and Queens Blvd. **$6,250,000.** CD 2/7/44, under N. Y., North Beach.

▲ **O., Columbus**—YOUTH CENTER—Ohio Dpt. Agriculture, Howard S. Foust, dir., State Office Bldg., S. Front St., youth center at state fairgrounds, incl. 1 bldg. for basketball tournaments; driveways and parks, cafeteria, dormitory, etc. **$1,000,000.**

▲† **O., Parma**—HOSPITAL—Veterans Admin., Vermont Ave. between H and I Sts., N. W. Wash. 25, D. C., 1,000-bed neuropsychiatric hospital adjoining present Crile Hospital, on 178-acre site near York, Pleasant Valley Rds. and Parma Heights Blvd. **$21,000,000.** CD 10/1/48.

▲ **O., Toledo**—OFFICE—City, City Hall, and Comrs, Lucas Co., Court House, city-county office bldg. in Civic Center area, **$4,000,000.** CD 12/6/44.

▲ **Pa., Indiana**—SCIENCE HALL, etc.—General State Auth., Harrisburg, GSA 407, plans by Marlier & Johnstone, 1107 Empire Bldg., Pittsburgh, 3 story brick steel, science hall and class rooms for Indiana State Teachers College. **$1,000,000.**

▲ **Pa., Marion Center**—HIGH SCHOOL—Marion Center Joint School Dist., Marion Center, plans by Schearen & Rittenhouse, Kittanning, 2 story, 60x500 ft., brick block high school. **$1,050,000.**

Pa., Shingle House—HIGH SCHOOL—School Dist. of Shinglehouse, Shinglehouse, plans by Freeburg & Lindquist, Jamestown, 1 story, bsmnt., steel, brick Junior-Senior High School. **$500,000.**

Va., Waynesboro—SCHOOL—Augusta Co., Waynesboro and Staunton, Consolidated School. **$500,000.** F. B. Glenn, c/o owner, supt. schools. CD 7/26/46.

▲ **Wash., Seattle**—SUB-STATION—City, County City Bldg., Zone 4, city light sub-station in Duwamish Dist. with 2.4 mi. double-circuit 230 kv transmission line, **$4,500,000,** E. B. Hoffman, city light supt.

Ont., Newmarket—HOME—York Co., Toronto, plans by H. D. Chapman, 2589 Eghniton Ave. W., Toronto, 1 story home for the aged, **$900,000.** CD 11/28/49.

COMMERCIAL BUILDINGS

Calif., Walnut Creek—HOSPITAL—Permanente Hospital Foundation, Broadway and W. MacArthur Sts., Oakland, plans by Clarence W. Mayhew, 251 Post St., San Francisco, 75-bed hospital. **$500,000.** CD 4/18.

Conn., Bridgeport—TEMPLE—Park Ave. Temple, 1100 Park Ave., plans by Leonard Asheim, consult. archt., 11 Sheldon Terrace, New Haven, brick, limestone or marble trim temple, Park Ave. and Benson St. **$500,000.**

Conn., Hartford—STORE—W. T. Grant Stores, c/o Gordon Anderson, vice pres., 45 Bromfield St., Boston, Mass., expansion store, 26 State St. to combine with Regal Theater, 42 State St., **$608,000.**

▲ **Conn., Wethersfield**—OFFICE—The Connecticut Power Co., 226 Pearl St., Hartford, plans by Westcott & Mapes, 109 Church St., New Haven, 2 story, approx. 50,000 sq. ft. brick steel, concrete office. **$1,000,000.**

▲ **D. C., Wash.**—OFFICE—American Assn. for the Advancement of Science, 1515 Massachusetts Ave. N.W., plans by Architects' Collaborative, 96 Mt. Auburn St., Cambridge, Mass., office, Scott Circle. **$1,300,000.**

▲ **Ill., Evanston**—HOME—James C. King Home for Old Men, 360 E. Garfield Blvd., Chicago, plans by Holabird & Root & Burgee, 180 N. Wabash St., Chicago, Zone 1, 6 story old men's home, Oak and Grove Sts. **$1,125,000.**

Ia., Des Moines—HOTEL—Boss Hotels Co., Edwin A. Boss, pres., 4 and Locust Sts., Des Moines, Ia., 96 room, etc. addn. to Hotel Savery. **$500,000.** Dougher Rich & Woodburn, 302 Garver Bldg., archts. CD 12/12/51.

▲ **Mass., Worcester**—HOSPITAL—Hahnemann Hospital, 281 Lincoln St., plans by Johnson & Ristigan, 390 Main St., 4 story, bsmnt., brick hospital addn., incl. laundry, dining room, nurses home. **$1,500,000.** CD 7/6.

▲ **Mo., St. Louis**—MEDICAL OFFICE—Hanrose Investment Co., 40 N. Kingshighway Blvd., plans by Isador Shank, 8135 Forsyth Blvd., Clayton, Zone 24, 25 story, bsmnt., brick, concrete, steel office, parking facilities on 4 levels, Kingshighway and W. Pine Blvd. **$5,500,000.** CD 2/13.

▲ **N. Y., New York**—OFFICE—William Kaufman, 342 Madison Ave., Zone 17, plans by William Lascaze, 211 E. 48 St., Zone 17, 28 story office, 711 Third Ave. **$6,500,000.**

▲ **N. Y., Brooklyn**—HOUSES—Fillmore Gardens Cooperative, Inc., 215 Montague St., plans by Seelig & Finkelstein, 153 Pierrepont St., Zone 2, 170 two-family houses, Fillmore Ave. E. 53, 55, 56, 67, 68 and 59 Sts., and Avenue T and Pearson St. **$2,720,000.**

N. Y., Brooklyn—APARTMENT—Helen Operating Corp., 8 Court St., Zone 2, plans by Kavy & Kavavitt, 44 Court St., Zone 2, 6 story apartment and garage 9902-9948 Third Ave. **$720,000.**

N. Y., Brooklyn—APARTMENT—Shorecrest Apartments, Inc., 150 West End Ave., Zone 29, plans by Joshua Tabatchnick, 16 Court St., Zone 2, 6 story apartment, 2-24 West End Ave. **$800,000.**

▲ **N. Y., Greenburgh**—OFFICE—Union Carbide & Carbon Co., 30 E. 42 St., New York, Zone 17, plans by Eggers & Higgins, 100 E. 42 St., New York, Zone 17, office bldgs. on 282 acre tract, **$12,000,000-$17,000,000.** CD 6/24.

▲ **O., Parma**—SHOPPING CENTER—Fred Latimer, c/o Weinberg & Teare, archts., Citizens Bldg., Cleveland, Zone 14, 22 unit 1 story, 800x1,000 ft. brick shopping center, Broadview and Pleasant Valley Rds **$1,700,000.** All work to be directed by Max Marmorstein, (real estate sales and development mgr.), 9th-Chester Bldg., Cleveland, Zone 14.

▲ **Pa., Phila.**—NURSES HOME—University of Pennsylvania, 209 S. 36 St., plans by Schmidt, Garden & Erikson, 104 S Michigan Ave., Chicago, Ill., nurses home. **$2,500,000.** CD 2/2/49.

▲ **Tex., Bellaire**—DWELLINGS—J. L. Williams, George Hillyer & Chris Hubert, Bellaire, Job 1, 35 frame dwellings, concrete slab fdn. **$350,000;** Job 2, 60 frame dwellings, masonry trim, **$600,000;** Job 3, 55 dwellings, concrete slab fdn., **$550,000;** Job 4, 41 frame dwellings, concrete slab fdn., **$410,000;** Job 5, 65 frame, masonry trim dwellings, concrete slab fdn., **$650,000;** Job 6, 50 dwellings, **$500,000,** foregoing on 75-acre tract between Old Cedar-Bayou-Lunchburg Rd. and Brooks-Winfree Rd.

▲ **Tex., Harlingen** — HOSPITAL, etc. — Valley Baptist Hospital, Baptist General Convention of Texas, Baptist Bldg., Dallas, plans by Cocke, Bowman & York, 1220 W. Harrison St., hospital unit, **$1,000,000;** remodeling, repairing general hospital unit into a tuberculosis hospital, **$300,000;** heating and power plant, **$90,000.** CD 4/24.

▲ **Tex., Houston**—DWELLINGS—Five Star Homes, 731 E. Friar Tuck St., 38 frame, masonry trim dwellings, concrete slab fdn. dwellings, various locations, **$390,000;** 45 frame, brick dwellings, concrete slab fdn., Donna Belle Lane, **$540,000;** 40 one story brick dwellings, concrete slab fdn., W. 42 St., **$420,000;** 48 frame, masonry dwellings, concrete post fdn., northeast sect. of city, **$535,000;** 50 brick dwellings, concrete slab fdn., Oak Forest addn., **$625,000;** 36

one story brick dwellings, concrete slab fdn., T. C. Jester Blvd., **$448,000**; 32 frame dwellings, concrete slab fdn., extens. of Saxon St., **$332,000**.

▲ **Tex., Houston**—DWELLINGS—Long Point Development Co., c/o Jim Leavell, 3317 Dunhill St., Unit 1, 36 cedar shake dwellings, **$360,000**; Unit 2, 30 frame, cedar shake dwellings, **$300,000**; Unit 3, 40 frame, brick trim dwelling, **$390,000**; Unit 4, 45 brick dwellings, **$425,000**; Unit 5, 50 cedar shake, brick, frame dwellings, **$495,000**; Unit 6, 32 contemporary type, brick dwellings, **$325,000**, in an area of Long Point Woods.

▲ **Tex., Odessa**—OFFICE—Ben Nedow, c/o Radio Station KECK, Odessa, plans by Wyatt C. Hedrick, 1005 First Natl. Bank Bldg., Fort Worth, 10 story office. **$1,000,000**. Phillips Petroleum Co., Bartlesville, Okla., leases 5 upper floors. CD 6/25.

▲ **Wash., Richland**—HOUSING—Spokane Housing, Inc., N. 2918 Nevada St., Spokane, 500 rental housing units. **$5,000,000**.

▲ **Ont., Toronto**—OFFICE—Owner, c/o Earle L. Sheppard, archt., 57 Queen St. W., 15 story, steel, L-shaped Exchange Building Office, incl. 3 story parking garage on south side Adelaide St. W. between Yonge and Bay Sts. **$3,000,000**.

Que., Dolbeau—HOSPITAL—Congregation des Hospitaliers deJesus, Chicoutimi, plans by Desgagne & Boileau, 369 Racine St., Chicoutimi, 2 story, bsmnt., 50-bed hospital, **$500,000**.

INDUSTRIAL BUILDINGS

▲ **Conn., East Hartford**—LABORATORY—Pratt & Whitney Div. United Aircraft Corp., 400 Main St., Hartford, plans by Albert Kahn Associated Architects & Engineers, Inc., New Center Bldg., Detroit, Mich., Andrew Willgoos Turbine Laboratory addn., jet engine facilities, 3 new high altitude test cells, Over **$2,000,000**. McConalty-Hoffman & Assoc., 150 Broadway, New York, N. Y., consult. engrs. for special equip.

▲ **Ill., Berkeley**—FACTORY—Webster-Chicago Corp., 5610 Bloomingdale St., Chicago, (first unit), 125,000 sq. ft. factory, **$1,100,000**, Olsen & Urbain, 5 S. Wabash St., Chicago, Zone 3, consult. engrs.

N. Y., Maspeth—FACTORY—Manufacturers Corrugated Box Co., 210 King St., Brooklyn, Zone 31, 1 story 240x300 ft., factory 58 St. and 55 Dr. **$400,000**. Joseph Rosen, c/o owner, archt.

▲ **Okla., Pryor**—PLANT—Deere & Co., 1325 3rd Ave., Moline, Ill., urea chemical and fertilizer plant. **$20,000,000**.

Pa., Irwin—MANUFACTURING—Westinghouse Electric Corp., Union Bank Bldg., Pittsburgh, 2 story, 100x200 ft. brick, block, steel frame mica mfg. bldg. **$500,000**.

Pa., Kittanning—PLANT—Durez Plastics & Chemical, Inc., 17 Walck Rd., North Tonawanda, N. Y., plastics mfg. plant, near here. **$500,000**.

▲ **Tex., Fort Worth**—FACTORY, etc.—Chicago Pneumatic Tool Co., 5000 Hy. 81, 1 story, 202x602 ft., brick, structural steel factory and office, rein.-con. fdn. **$1,000,000**. Walter Kidde Engineers Southwest, Inc., 1205 Holman St., Houston, consult. engr.

▲ **Wash., Concrete**—POWER PLANT—Puget Sound Power & Light Co., Stuart Bldg., Seattle, Zone 1, enlarging Baker River power plant, near here, **$9,000,000**.

▲ **Wash., Electron**—POWER PLANT—Puget Sound Power & Light Co., Stuart Bldg., Seattle, Zone 1, White River power plant addn. **$9,000,000**.

UNCLASSIFIED

▲ **Calif., San Francisco**—PIERS—Bd. State Harbor Comrs., Ferry Bldg., Piers 15 and 17 imprvs., Embarcadero. **$1,800,000**.

▲ **Colorado**—RURAL DISTRIBUTION LINES—Southeast Colorado Power Assoc., LaJunta, 973 mi. rural distr. lines, 67 mi. 69KV transmission line and sys. imprvs., Prowers Co. **$2,275,000**.

▲ **Illinois**—UNDERGROUND STORAGE FACILITIES—Natural Gas Transmission Co., 20 N. Wacker Dr., Chicago, Zone 6, underground storage facilities, inc pipeline, comp. pumps, meters, dehydration units, Kankakee and Iroquois Counties, **$15,000,000**.

▲ **Nebraska**—RURAL DISTRIBUTION LINES—K. B. R. Electric Membership Corp., Bassett, rural distr. lines and misc. extens. and imprvs., Rock Co. **$1,330,000**. Raymond H. Reed & Co., Columbus, consult. engrs. CD 1/19/49.

▲ **Ohio**—TRANSMISSION LINE—Ohio Edison Co., 47 N. Main St., Akron, transmission line from Springfield to Marion. **$2,048,000**.

Oklahoma—SERVICE STATIONS—Phillips Petroleum Co., Bartlesville, 6 service stations and restaurant on 88 mi. Turnpike, for Oklahoma Turnpike Auth., Capitol, Oklahoma City, Okla. **$500,000**.

Oklahoma—RURAL DISTRIBUTION LINES—Indian Electric Co-operative, Cleveland, 108 mi. rural distr. lines, 24 mi. 69KV transmission line and sys. imprvs., Pawnee Co. **$675,000**. CD 1/19/49.

▲† **Pa., Phila**—DRYDOCK—Dpt. Navy, Phila. Naval Base, Phila., Dry Dock 1 reconstruction. **$1,300,000**. Harry-Dechant Assoc., Fidelity Phila. Trust Bldg., engrs. CD 6/27.

Tex., Dallas—POWER LINE CONNECTIONS, etc.—Dallas Power & Light Co., Dallas Power & Light Bldg., new power line connections, **$300,000**; addnl. line transformers and regulators, **$450,000**.

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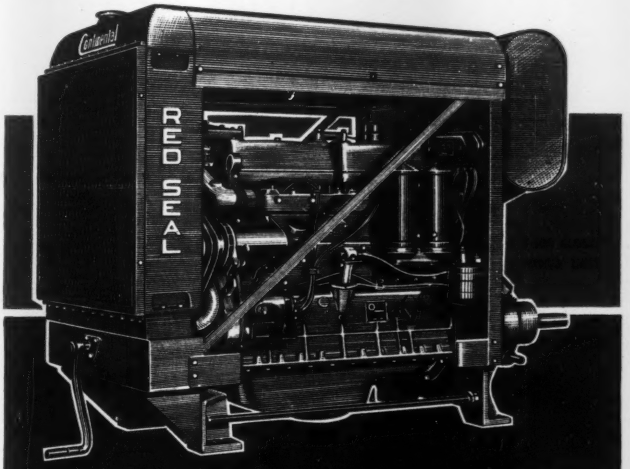

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PUMPS

ANY EQUIPMENT IS BETTER
WITH CONTINENTAL RED SEAL POWER

Continental Motors Corporation
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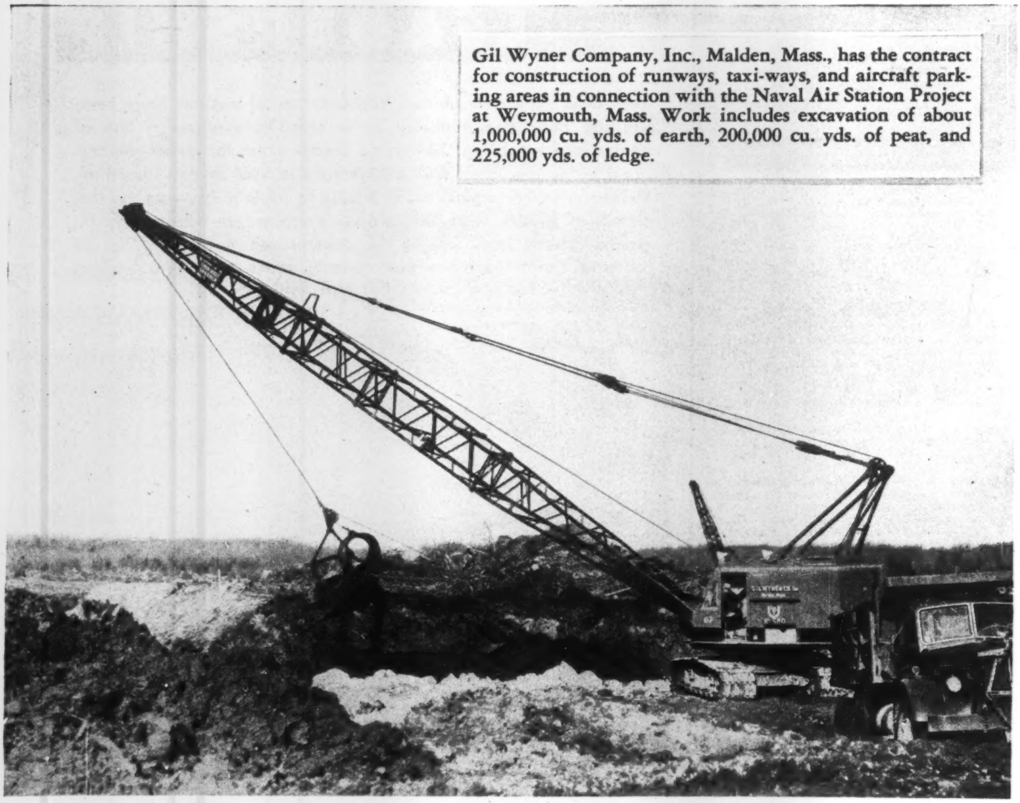
PARTS AND SERVICE EVERYWHERE

GULF PRODUCTS *and* FINE SERVICE

keep equipment rolling

on Mass. Naval Air Station Project



Gil Wyner Company, Inc., Malden, Mass., has the contract for construction of runways, taxi-ways, and aircraft parking areas in connection with the Naval Air Station Project at Weymouth, Mass. Work includes excavation of about 1,000,000 cu. yds. of earth, 200,000 cu. yds. of peat, and 225,000 yds. of ledge.

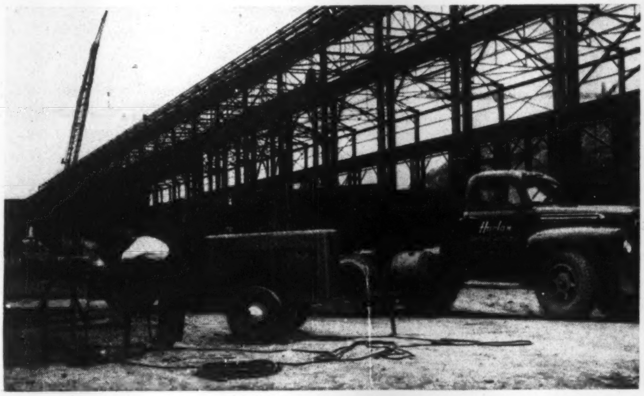
ANOTHER big earth-moving project where Gulf lubricants and fuels are working as a team to keep the job rolling smoothly—and on schedule.

Like many other leading contractors, Gil Wyner Company has found that the extra quality of Gulf petroleum products is reflected in an extra margin of performance for equipment, fewer delays, lower maintenance costs. And they appreciate Gulf's prompt delivery service.

Write, wire, or phone your nearest Gulf office and arrange to use Gulf quality lubricants and fuels on your next job. They are quickly available to you through 1400 warehouses located in 31 states from Maine to New Mexico.

GULF

NEW PRODUCTS



Welder performs its prime job and . . .

. . . also provides 3 kw standby power

Westinghouse now has a lightweight, compact, 200-amp, engine-driven welder with up to 3 kw of standby power—all in the same unit. On the job pictured above, Harlan Electrical Construction Co. used the standby power in the early stages of their job as a source of supply for their field office and shop; later moved it out to the job proper to perform its regular welding jobs. In the lower photo, note the lead wire running from the 110-v outlet, carrying enough power to supply lights, power saw, drills, pipecutters, etc.

The welder requires no exciter and will supply the 3 kw at 100 per cent power factor, or 2 kva at 80 per cent power factor. The ac panel is equipped with a voltmeter, automatic circuit breaker, duplex and heavy-duty receptacles.

Measuring 23 x 39½ x 62⅝ in., the weight of the unit is only 1,100 lb. It can be mounted for fast towing on pneumatic tires as above or delivered for truck transport as a unit. Powered by a Ford, Industrial Type 120 engine (same as in a Ford tractor), it is started by hand cranking with magneto ignition as standard equipment. Battery start and ignition can be readily furnished if desired, however. Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa.

Revolutionary new chain announced by Whitney

After four years of development and research, Whitney Chain Co. has come forth with a special roller chain incorporating oil-impregnated sintered metal bushings that require practically no lubrication. Although roller chain has been recognized for years as an efficient and versatile means of me-

(*"New Products" continued on p. 124*)

FAST, SURE DRAINING
of Ground Water is Vital
to WORLD'S LARGEST
AIRPORT

That's Why Idlewild Depends on
WALKER POROSWALL
RAPID DRAIN PIPE

Efficient and rapid drainage at Idlewild was a major problem — solved by using WALKER POROSWALL as a permanent installation for sub-surface runway drainage. In the words of Carillo & Green Associates, consulting engineers, POROSWALL "lowered the water table to a level beyond our best expectations."

WALKER POROSWALL Rapid Drain Pipe is the fastest drainage medium known. It is porous concrete, extremely permeable throughout its entire circumferential area. There are no open joints or perforations to permit the entrance of dirt. This prevents clogging!

Write for detailed data and sample

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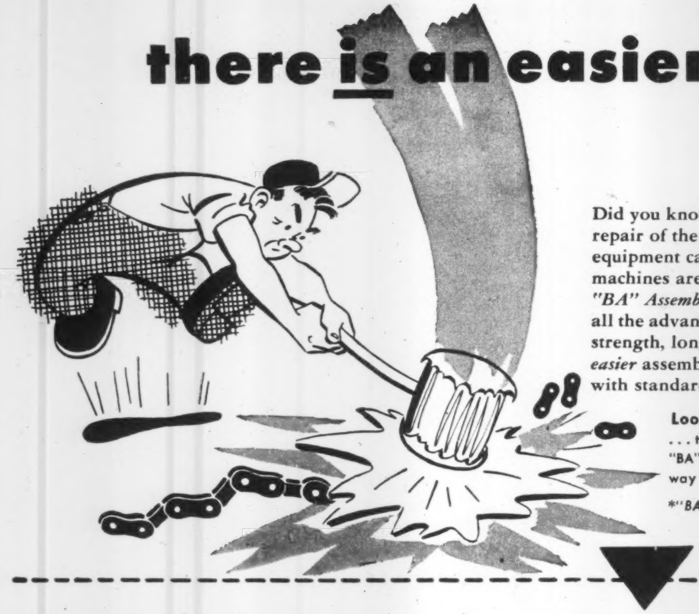
there *is* an easier way!

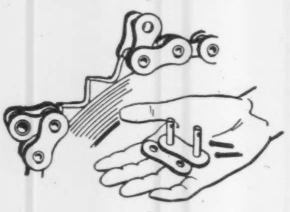


Did you know the job of assembly, disassembly or repair of the roller chain drives on your heavy equipment can actually be *easy.* It can . . . if your machines are equipped with Baldwin-Rex® *"BA" Assembly* Roller Chain. With "BA"* you get all the advantages of *riveted* roller chain . . . high strength, long life, low cost . . . plus even *easier* assembly, disassembly and repair than with standard cottered chain.

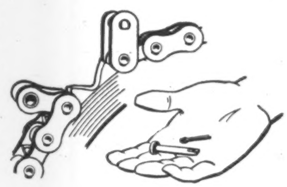
Look at the illustrations
. . . there's no doubt about it . . . the "BA" way is the easy way . . . the time-saving way . . . the money-saving way

"BA" means Baldwin Assembly

With standard roller chain, in order to take the chain apart in the field, you must drive out the entire pin link with hammer and punch. There is always the danger of damage to chain parts as the entire pin link is driven out. Assembly presents additional problems. The two pins must be driven back into the chain while one or more side plates (depending on the number of strands) are held in position. You almost need 3 hands to do the job.



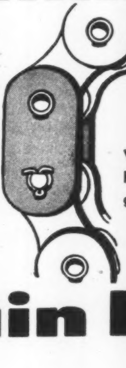
With Baldwin-Rex "BA" Assembly, it's an entirely different story. All you have to do is remove the cotter and drive out the *single pin* of the special "BA" connector link. The other pin stays firmly riveted in place. No danger of damaging parts. Chain is cut by removing only 2 parts . . . the cotter and the single pin connector. To put the chain together, just put the side plates and roller links in place on the sprocket, insert the single pin connector pin and secure with the cotter. That's all there is to it!



For all the facts on "BA,"
send for our Bulletin 50-6.
Chain Belt Company,
301 Plainfield St.
Springfield 2,
Mass.

"BA"
riveted
roller
chains

BALDWIN-REX
ROLLER CHAINS



WHERE YOU SEE *THIS,* you see QUALITY EQUIPMENT with component parts selected to give you most for your money.

A PRODUCT OF **Chain Belt** COMPANY
OF MILWAUKEE

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chanical power transmission, its use has been limited by the need for either externally-applied or totally enclosed lubrication.

In a recent test a ⅜-in. pitch oil-impregnated sintered bushing chain and the same size standard roller chain, prelubricated to the best practice, were installed on 19-tooth and 45-tooth sprockets having a center distance of 8.75 in. They were then run under a 10-hp load at 1,900 rpm (comparable to a motorcycle chain operating at 80 mph at full engine hp). After 20 hours of operation, the standard chain showed wear or elongation of .380 in. The sintered bushing chain showed only .808 in., indicating several hundred percent increase in anticipated service life. The company will entertain requests for further uses with their new development. WHITNEY CHAIN COMPANY, HARTFORD, CONNECTICUT.

Mechanical pencil is also a slide rule

Here's a compact pocket slide rule incorporated into a two-color pencil. Made of plastic and metal, the Devco writing slide rule was sturdily designed to meet the needs of drafting room, school, shop or field, at the same time limiting the plurality of instruments. Only 6½ in long and weighing less than an ounce, it has a telescoping measuring scale, reading magnifier, depth gage in inches and centimeters, detachable straight edge and a plain and enlarging indicator for the slide rule's A, B, C, D, L, S, T, CM and IN scales. THE DEVICE DEVELOPMENT CO., 226 WEST 4TH STREET, NEW YORK 14, N. Y.

ADVERTISERS IN THIS ISSUE

Acker Drill Co. 96
Acrow, Inc. 63
Allis-Chalmers Mfg. Co. 58, 59
American Trailer Co., Inc. 91
Angelina Hardwood Sales Co. 104
Arkwright Finishing Co. 51
Armco Drainage & Metal Prod., Inc. 18

Barber-Greene Company 13
Bethlehem Steel Co. 30
Bruning Co., Inc., Charles 33
Brunson Instrument Co. 109
Buck Equipment Co. 109
Buff & Buff Mfg. Co. 96
Butler Mfg. Co. 11

Casey & Case Foundation Co. 99
Cast Iron Pipe Research Assoc., Inc. ..64, 65
Caterpillar Tractor Co. 16
Ceco Steel Products 47
Cement Gun Company 69
Century Geophysical Corp. 89
Chain Belt Co. 114
Chicago Bridge & Iron Co. ....2nd Cover
Chrysler Corp., Ind. Engine Div 103
Cleco Div., Reed Roller Bit Co. 70
Clipper Mfg. Co. 105
Cole Mfg. Co., R. D. 99
Colorado Fuel & Iron Corp.,
  Wickwire Spencer Steel Div. 4
Concrete Surfacing Machinery Co. 99
Continental Motors Corp. 111
Cummins Engine Co. 101

Detroit Diesel Engine Div.,
  General Motors Corp. 49
Douglas Fir Plywood Assn. 8, 9
Du Pont de Nemours & Co., Inc.,
  Explosives Dept. 28, 29

Electric Tamper & Equipment Co. 66
Euclid Road Machinery Co. 5

Franki Foundation Co. 97
Fuller Mfg. Co. 56

Georgia-Pacific Plywood Co. 14
Goodyear Tire & Rubber Co. 3
Grace Mfg. Co., W. E. 72
Griffin Wellpoint Corp. 92
Gulf Refining Co. 112
Gunite Concrete & Construction Co. 96
Gurley, W. & L. E. 98

Harnischfeger Corp. 52
Hayward Company 104
Horn Co., Inc., A. C. 43
Hyatt Bearings Div., G.M.C. 6
Hyster Co., The 68

Industrial Brownhoist Corp. 91
International Harvester Co. 106, 107
International Steel Co. 53

Jaeger Machine Co. 94
Jeffrey Mfg. Co. 108
Jones & Laughlin Steel Corp. 7

Keasbey & Mattison Co. 12

LaPlant-Choate Mfg. Co. 1
Leupold & Stevens Instruments, Inc. 2
Lewis & McDowell, Inc. 102
Link Belt Speeder Corp. 38

MacArthur Concrete Pile Co. 110
McGraw-Hill Book Co. 10
Mississippi Glass Co. 69

Nat'l. Clay Pipe Mfgrs., Inc. 71

Omega Machine Co. 99

Patent Scaffolding Co. 44
Phoenix Bridge Co. 110
Plasteel Products Co. 96

Raymond Concrete Pile Co. ....3rd Cover
Remington Rand, Inc. 37
Reynolds Metals Co., Inc. 55
Robertson Co., H. H. 95
Rust-Oleum Corp. 15

Sauerman Bros., Inc. 102
Spencer, White & Prentis, Inc. 94
Sprague & Henwood, Inc. 100
Standard Steel Works 104
Stang Corp., John W. 20
Stoody Company 61

Timber Engineering Co. 54
Timber Structures, Inc. 90
Timken Roller Bearing Co. ....4th Cover
Trailer Village, Inc. 100
Truscon Steel Company 50

United Steel Fabricators, Inc. 100
Universal Concrete Pipe Co. 67

Vulcan Iron Works 66

Walker Cement Products Co. 113
Wellman Engineering Co. 97
White Co., David 62
Wickwire Spencer Steel Div.,
  Colorado Fuel & Iron Corp. 4

Yeomans Brothers Co. 88

Professional Services....73, 74 & 75

SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

Employment
  Positions Vacant 75, 76
  Selling Opportunities Offered 76
  Positions Wanted 76
  Selling Opportunities Wanted 76
  Employment Services 76
Educational
  Books 77
  Schools 77
Business Opportunities
  Offered 77
Notices
  Proposal 83-86
Equipment
  (Used or Surplus New)
  For Rent 81
  For Sale 77-82
  Piling 82
  Pipe 80
  Rail 78
  Surveying Instruments 77
Wanted
  Equipment 77

ADVERTISERS INDEX..........86

ENGINEERING NEWS-RECORD

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EDITORIALS

Why secret?

One of the bills signed by the President last week authorizes more than a billion dollars for new overseas airbases at "classified" locations. Thus, despite the dismal failure to keep the Moroccan and Greenland bases "secret," the government starts the senseless merry-go-round all over again.

None of these new bases is going to remain for long unknown to the Russians, whose diplomats in the countries involved may indeed have already informed Moscow about them. Why then secrecy? Why censorship? Its only sure result is to complicate the job of building the bases, increase their cost and result in a Congressional investigation that will reveal their every detail.

Why not secret?

While on the subject of secrecy—and odd governmental interpretations of it—we would be remiss not to call attention to the article on p. 48. It tells of the Department of Commerce plan to have maps of 68 U. S. cities prepared showing how facilities should be dispersed against bombing attacks. They also show where the present concentrations of facilities are.

What greater gift could Moscow ask for than such a target file of most of our major cities?

We hope that the Department of Commerce is aware that its dispersal map is made almost exactly as a good saturation target map is made. We hope that it will adopt stronger security controls than the pious little sentence on page 13 of its instructions: " . . . reports should be disseminated only to persons having a legitimate use for them." We hope, in short, that reason and logic will rule when questions of secrecy have to be decided.

Educating sanitary engineers

The fast-growing field of sanitary engineering presents a formidable problem in the task of reorganizing engineering education, as proposed at the recent meeting of the American Society for Engineering Education (ENR July 10, p 152). Arguments have already been advanced pro and con divorcing the field completely from civil engineering, establishing it exclusively as a course of graduate study. Some of these arguments were aired in employer-educator discussions preceding ASEE's meeting (see p 40).

Problems in sanitary engineering education reflect fast growth of the field and expansion of demand for services of the sanitary engineer. Part of this expansion is due to growth in volume of construction of the facilities for which they must design processes and structures. But a bigger part of the expansion has been a widening out—into public health, regulatory work, and industry.

Yet despite its growth and diversification, sanitary engineering remains, nevertheless, as much a part of civil engineering as it ever was. With all of his need for chemistry, biology and bacteriology, the sanitary engineer still requires knowledge of structures, soil mechanics, hydraulics, pumps and electric motors.

There may be inadequate room in the undergraduate curriculum to educate full-fledged experts or to develop specialists in the various branches of sanitary engineering. But so also is there little chance in four years to turn out advanced structural experts. In both cases, graduate studies or concentrated training by employers must be depended upon to provide the specialized experts.

The immediate need is not for experts. The immediate need is for versatile young men with such a grasp of the fundamentals of sanitary engineering in all of its phases that they easily can take on a wide variety of simple tasks that lead to even more difficult ones. If in the present four-year courses, sanitary options in civil engineering schools are inadequate to fill that need, then these options should be strengthened.

Increased demand for sanitary engineers, by consultants, public works and public health agencies, and now industry, must be recognized. It is vital that our undergraduate civil engineering courses turn out men strong in the sanitary sciences—just as they produce others strong in geology, thermodynamics and structural analysis. Unless this is done the sanitary engineering needs of the nation cannot be met, just from sheer lack of educated personnel.

Big step forward

The action of the heads of the 19 unions that make up the Building and Construction Trades Department of the AFL in declaring themselves firmly against jurisdictional strikes (p. 21)—and putting teeth in the form of penalties into their declaration—is a major step forward.

There are ample reasons behind the action of the AFL leaders—not the least of them the growing realization that it is possible for construction to price itself out of its market—and thus cause unemployment among the building tradesmen. But the fact that the labor men themselves have thus formally recognized a threat to their industry—and decided to do something about it—is significant in itself.

It has long been contended that the big international unions could put a stop to these annoying, legalistic, job-stopping, cost-raising strikes, if they only would. Here is evidence that they can—given the will to do so through disciplinary action against their subsidiary organizations. For the good of the industry in its relations with labor and with the public, the unions should get every credit for this action.

completed

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Constructed for State of California Department of Public Works, Division of Highways.

spanning the South Channel Sweetwater River between National City and Chula Vista, California is this 332-foot long highway bridge supported by Raymond piles. It has a 28-foot wide roadway and is of reinforced concrete construction with concrete caps resting directly on the Raymond piles—another example of the important role Raymond is playing in the constant development of the highways of America.

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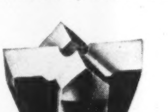
Timken carbide insert bits and multi-use bits are interchangeable in each thread series. And both types of Timken rock bits have these three important advantages: (1) made from electric furnace Timken fine alloy steel, (2) threads are not subject to drilling impact because of the special shoulder union developed by the Timken Company, (3) quickly and easily changed.

Call upon the 20-years' experience of our Rock Bit Engineering Service for help in selecting the best bits for *your* job. Write The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".



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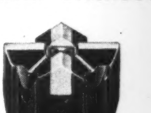

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